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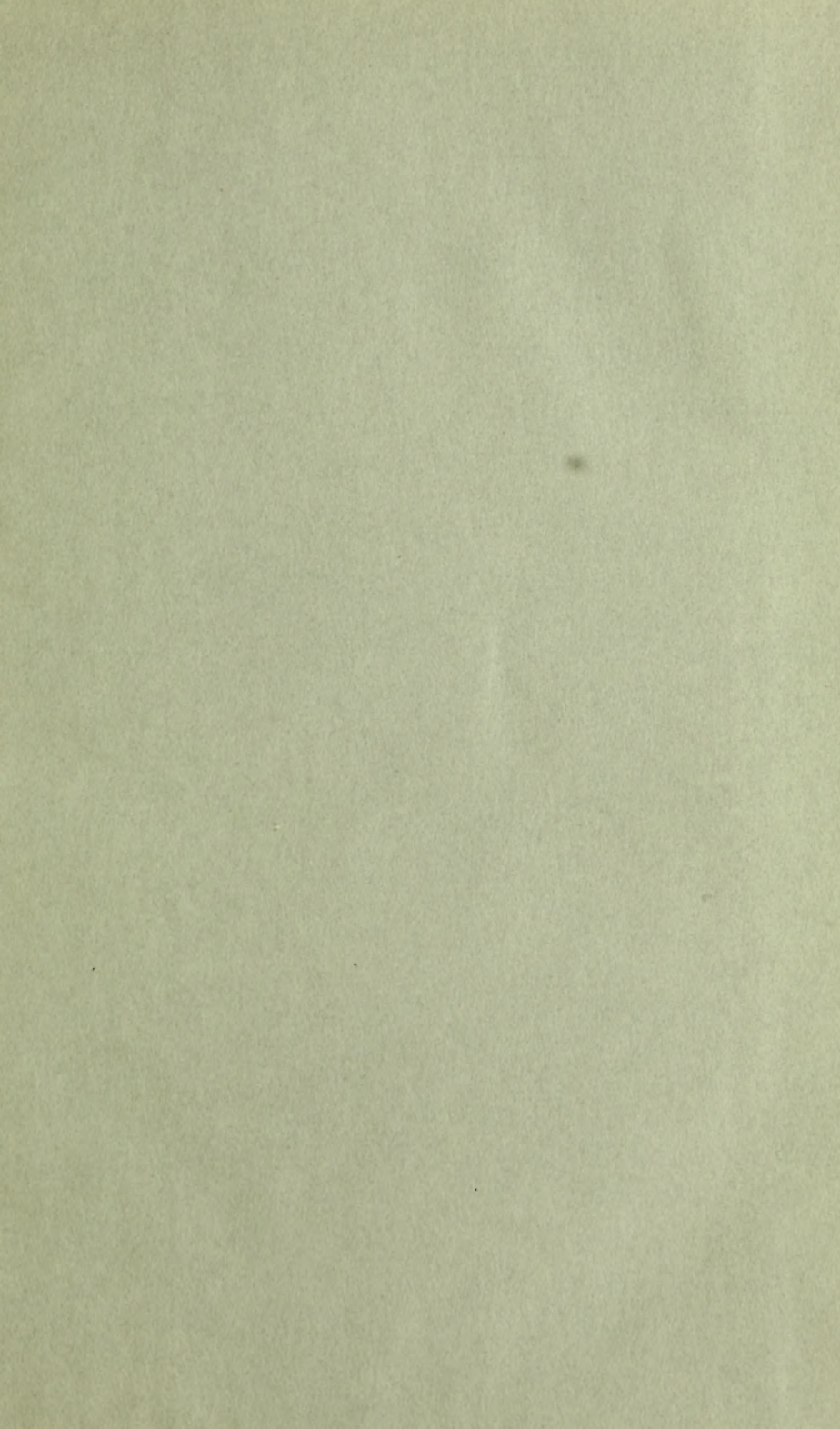


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DEPARTMENT OF THE INTERIOR

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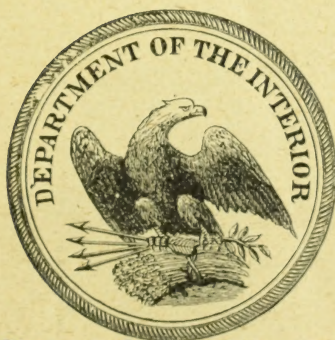
BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 100



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1893





UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL, DIRECTOR

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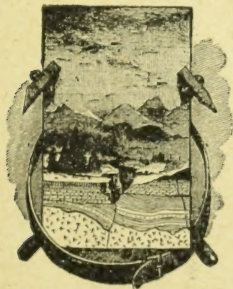
OF THE

PUBLICATIONS OF THE UNITED STATES GEOLOGICAL SURVEY

WITH THE LAWS GOVERNING THEIR PRINTING AND DISTRIBUTION

BY  
*Clemson College Library*  
*Government Publications*

PHILIP CREVELING WARMAN



WASHINGTON  
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1893



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## LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,  
UNITED STATES GEOLOGICAL SURVEY,  
*Washington, D. C., April 20, 1893.*

SIR: I have the honor to transmit herewith the manuscript of a bibliography and index of the publications of the Geological Survey, with a compilation of the laws governing their printing and distribution, prepared with a view to its publication as a bulletin.

Permit me to make use of this opportunity to thank you for the privilege of diverting a portion of my attention to this work and for your constant support and encouragement while engaged therein.

P. C. WARMAN.

Hon. J. W. POWELL,

*Director.*

### NOTICE.

All the publications of the U. S. Geological Survey are either sold or exchanged for scientific works of like value except the series of Annual Reports. The larger portion of the Survey's quota of the latter, also, go regularly to institutions and individuals with whom the Survey has established exchange relations, so that only a limited number of any Annual are available for gratuitous distribution, and these are quickly exhausted. The earlier Annuals can no longer be supplied by the Geological Survey, but the Secretary of the Interior has a small number for sale at cost of paper, printing, and binding. The Monographs, Bulletins, and Mineral Resources are purchasable of the Director of the Geological Survey at like low prices, which are given individually throughout the bibliography in this Bulletin. Checks, drafts, or postage stamps can not be received; all remittances must be for the exact amount in currency or by postal note or money order made payable to the Chief Clerk of the U. S. Geological Survey.



## PREFACE.

The publications of the U. S. Geological Survey catalogued and indexed herein are: Annual Reports 1 to 12, Monographs I to XX, Bulletins 1 to 99 (except 87, 88, and 89, reserved as numbers of a series not yet completed), the first eight volumes of Mineral Resources (1882-1891), such portions of the Geologic Atlas, with auxiliary and subsidiary maps, as have been completed, and a few miscellaneous brochures. The work has been done incidentally to the compiler's regular official duties, and therefore in a desultory manner, occupying his attention, now five minutes, now a half hour, through more than a year's time.

In the bibliographic work no limitations of detail were set, and the information given approximates completeness. Respecting the index, however, the intention has been to avoid much elaboration, which the Director of the Survey thought not highly desirable. The plan contemplated a broad and systematic classification of contents, alphabetically arranged, rather than a detailed and full index composed of unrelated items. To this end the large domain of knowledge into which the publications of the Geological Survey enter has been conceived as falling into the following fields: Geology (structural), geologic processes, petrography, paleontology, topography, and chemistry and physics. Under these names themselves and under the names of grand divisions in each of these fields entries have been grouped. For example, entries of a more strictly geologic character will be found aggregated under the period names of the stratigraphic column—Archean, Algonkian, Cambrian, Silurian, etc.; geologic processes, under the names of the processes, as Degradation, Metamorphism, Volcanism, etc.; those of a paleontologic nature, under Paleontology, Paleobotany, Plants, Vertebrate, Invertebrate, Brachiopoda, Lamellibranchiata, Pteropoda, etc.; those of a petrographic character, under Petrography, Lithology, Igneous, Sedimentary, Rocks, etc.; and so on. The names of states and countries have been treated as leading words, and so of course have the names of authors; and each paper has been entered under every significant word in its title.

For many of the bibliographic details the writer is indebted to Mr. James C. Pilling, who, while Chief Clerk of the Survey, was in the habit

of making memoranda of such matters as they passed through his hands; and he has contributed valued suggestions during the reading of the proof. Any excellence the index may be found to possess is due in large measure to Mr. G. K. Gilbert, who is responsible for interesting the writer in the project and who has at all times been found ready to advance it by advice and aid, and to Messrs. Whitman Cross, A. C. Peale, Charles S. Prosser, and I. C. Russell, who have kindly rendered assistance in special lines.

P. C. W.

WASHINGTON, D. C., *May 25, 1893.*

## LAWS RELATING TO THE PUBLICATIONS OF THE UNITED STATES GEOLOGICAL SURVEY.

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The legal provisions under which the various editions of the reports of the U. S. Geological Survey are published, sold, and distributed are as follows:

### GENERAL PROVISIONS IN THE ORGANIC ACT.

The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classification of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization: And the money resulting from the sale of such publications shall be covered into the Treasury of the United States \* \* \* [Approved March 3, 1879.]—*Statutes at Large*, vol. 20, pp. 394-395.

### USUAL NUMBER EDITION.

Fifteen hundred and fifty copies of any document ordered by Congress shall be printed, and that number shall be known as the usual number. No greater number shall be printed unless ordered by either House or as hereinafter provided.—*Revised Statutes*, sec. 3792.

Increased for a time to 1,900 to meet the requirements of law, and subsequently decreased to 1,734.

### USUAL NUMBER TO BE ADDED TO ALL ORDERS.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled*, That whenever any document or report shall be ordered printed by Congress, there shall be printed, in addition to the number in each case stated, the "usual number" of copies for binding and distribution among those entitled to receive them; and this shall apply to all unexecuted orders now in the office of the Public Printer. [Approved July 7, 1882.]—*Statutes at Large*, vol. 22, p. 388.

When the foregoing joint resolution was approved, monograph 11 of the survey publications—the one first to appear—had just been printed and was then being delivered; it was consequently not covered by this resolution, and in order that the same number of copies should be published of it as of the monographs to succeed it, the following joint resolution was subsequently passed:

### USUAL NUMBER OF MONOGRAPH 11.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled*, That there be printed at the Government Printing Office the usual number of monograph second of the publications of the United States Geological Survey, with the necessary illustrations, and to conform to the editions al-



ready issued by the Survey. [Approved March 2, 1885.]—*Statutes at Large*, vol. 23, p. 519.

MESSAGE AND DOCUMENTS EDITION.

Of the documents named in this section there shall be printed and bound, in addition to the usual number for Congress, the following numbers of copies, namely:

First. Of the documents accompanying the annual reports of the Executive Departments, one thousand copies for the use of the members of the Senate, and two thousand copies for the use of the members of the House of Representatives.—*Revised Statutes*, sec. 3798.

DEPARTMENTAL EDITION.

*Provided*, That hereafter the Congressional Printer shall print, upon the order of the heads of the Executive Departments, respectively, only such limited number of the annual reports of such Departments and necessary accompanying reports of subordinates as may be deemed necessary for the use of Congress.—*Revised Statutes*, Supplement, p. 93.

SECOND AND THIRD ANNUALS, SPECIAL EDITION.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled*, That there be printed, at the Government Printing Office eleven thousand copies each of the second and third annual reports of the Director of the United States Geological Survey, with the necessary illustrations and charts, five thousand copies of which shall be for the use of the House of Representatives, two thousand five hundred for the use of the Senate, and two thousand five hundred for the use of the United States Geological Survey, and one thousand for sale by the Public Printer, at the cost of publication with ten per cent added thereto; the illustrations and charts to be made by the Public Printer under the direction of the joint committee on printing. [Approved August 5, 1882.]—*Statutes at Large*, vol. 22, p. 393.

FOURTH AND FIFTH ANNUALS, SPECIAL EDITION.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled*, That there be printed at the Government Printing Office, in addition to the number already ordered by law, fifteen thousand five hundred copies of each of the Fourth and Fifth Annual Reports of the Director of the United States Geological Survey, uniform with the preceding volumes of the series; of which three thousand five hundred of each shall be for the use of the Senate, seven thousand for the use of the House of Representatives, and five thousand for distribution by the Geological Survey. [Approved June 26, 1884.]—*Statutes at Large*, vol. 23, p. 276.

SIXTH AND SEVENTH ANNUALS, SPECIAL EDITION.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled*, That there be printed at the Government Printing Office, in addition to the number already ordered by law, fifteen thousand five hundred copies of each of the sixth and seventh annual reports of the Director of the United States Geological Survey, uniform with the preceding volumes of the series; of which three thousand five hundred shall be for the use of the Senate, seven thousand for the use of the House of Representatives, and five thousand for the distribution by the Geological Survey. [Approved March 2, 1885.]—*Statutes at Large*, vol. 23, p. 519.

EIGHTH AND NINTH ANNUALS, SPECIAL EDITION.

*Resolved by the Senate (the House of Representatives concurring herein)*, That there be printed at the Government Printing Office, in addition to the number already ordered by law, fifteen thousand five hundred copies of the eighth and ninth annual reports

of the Director of the United States Geological Survey, uniform with the preceding volumes of the series, of which three thousand five hundred of each shall be for the use of the Senate, seven thousand for the use of the House of Representatives, and five thousand for distribution by the Geological Survey.—*Congressional Record*, vol. 19, pp. 6498, 6500.

TENTH, ELEVENTH, AND TWELFTH ANNUALS, SPECIAL EDITION.

*Resolved by the House of Representatives (the Senate concurring herein),* That there be printed at the Government Printing Office, in addition to the number already ordered by law, fifteen thousand five hundred copies each of the tenth, eleventh, and twelfth annual reports of the Director of the United States Geological Survey, uniform with the preceding volumes of the series, of which three thousand five hundred of each shall be for the use of the Senate, seven thousand for the use of the House of Representatives and five thousand for distribution by the Geological Survey.—*Congressional Record*, vol. 21, pp. 872, 2112.

DISTRIBUTION OF PUBLIC DOCUMENTS.

The copies of journals, books, and public documents which are or may be authorized to be distributed to incorporated bodies, institutions, and associations within the States and Territories, shall be distributed to such bodies as shall be designated to the Secretary of the Interior by each of the Senators from the several States respectively, and by the Representatives in Congress from each congressional district, and by the Delegate from each Territory. The distribution shall be made in such manner that the quantity distributed to each congressional district and Territory shall be equal; except that whenever the number of copies of any publication is insufficient to supply therewith one institution, upon the designation of each member of the Senate and House of Representatives, the copies at the disposal of the Secretary may be distributed to such incorporated colleges, public libraries, atheneums, literary and scientific institutions, boards of trade, or public associations, as he may select.

The selection of an institution to receive the documents ordered to be published or procured at the first session of any Congress shall control the documents of the entire Congress, unless another designation be made before any distribution has taken place under the selection first made. Where the same work is printed by order both of the Senate and House of Representatives, the duplicates may be sent to different institutions, if so desired, by the member whose right it is to direct the distribution. And the public documents to be distributed by the Secretary of the Interior shall be sent to the institutions already designated, unless he shall be satisfied that any such institution is no longer a suitable depository of the same. Congressional journals and public documents, authorized to be distributed to institutions on the designation of members of Congress, shall be sent to such libraries and institutions only as shall signify a willingness to pay the cost of their transportation.—*Revised Statutes*, secs. 501, 502.

DISTRIBUTION OF SPECIAL MEMOIRS AND REPORTS OF THE SURVEY.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That there shall be distributed from the number of special memoirs and reports of the United States Geological Survey now authorized by law one copy of every such publication to every public library which shall be designated to the Secretary of the Interior as follows: Two public libraries to be designated by each of the Senators from the States, respectively, two public libraries by the Representative in Congress from every Congressional district, and two public libraries by the Delegate from every Territory: such public libraries to be additional to those to which the said publications are distributed under existing law. [Approved March 3, 1887.]—*Statutes at Large*, vol. 24, p. 647.

## SALE OF PUBLIC DOCUMENTS BY THE PUBLIC PRINTER.

If any person desiring extra copies of any document printed at the Government Printing Office by authority of law shall, previous to its being put to press, notify the Congressional Printer of the number of copies wanted, and shall pay to him in advance the estimated cost thereof and ten per cent thereon, the Congressional Printer may, under the direction of the Joint Committee on Public Printing, furnish the same.—*Revised Statutes, sec. 3809.*

## SALE OF PUBLIC DOCUMENTS BY THE SECRETARY OF THE INTERIOR.

*Resolved, by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior be, and he is hereby, authorized to sell at cost price, to any party wishing to purchase the same, any public document of which copies available for this purpose, not required for official use, remain: Provided, That only one copy of any document be sold to any one person.* [Approved March 3, 1887.]—*Statutes at Large, vol. 24, p. 647.*



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BIBLIOGRAPHY

OF THE

PUBLICATIONS OF THE UNITED STATES GEOLOGICAL SURVEY.

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# BIBLIOGRAPHY OF THE PUBLICATIONS OF THE U. S. GEOLOGICAL SURVEY.

By P. C. WARMAN.

## ANNUAL REPORTS.

FIRST ANNUAL REPORT, 1879-1880.

[First] Annual report of the United States geological survey [by Clarence King, director].

In 46th congress, 3d session, house of representatives, ex. doc. 1, part 5, report of the secretary of the interior, being part of the message and documents communicated to the two houses of congress at the beginning of the third session of the forty-sixth congress, in three volumes, vol. II, pp. 333-392; Washington, 1880. 8°. No map. The report is dated Nov. 1, 1880, and signed Clarence King, director.

This edition of this volume consisted of 1,900 copies, the "usual number." A portion of these (about 800) were, as is customary, delivered unbound; the remainder (about 1,100) were printed later and bound in sheep, and these constitute vol. 10 of the "Executive documents of the house of representatives for the third session of the forty-sixth congress."

In addition to the "usual number" an edition of 3,000 copies of the same document was printed, as the law directs, "1,000 copies for the use of the members of the senate and 2,000 copies for the use of the members of the house of representatives." These 3,000 were bound, as is customary, in black cloth. Their title is identical with that of the 1,900 edition, with the exception of the omission at the top of the designation of the congress, session, etc., the title beginning "Report of the secretary of the interior." Survey report, pp. 333-392.

Besides the 4,900 copies of this volume described above, 750 copies of the same were printed by order of the secretary of the interior. They are bound in dark red cloth and titled as follows:

Annual report | of the | secretary of the interior | on the | operations of the department | for | the year ended June 30, 1880 | In three volumes. | Volume II. |

Washington: | government printing office. | 1880.

The survey report occupies pp. 333-392.

On the requisition of the director of the survey the secretary of the interior caused to be printed for the use of the survey 2,000 separate copies of the survey report, as follows:

First annual report | of the | United States geological survey | to the | hon. Carl Schurz, | secretary of the interior. | By | Clarence King, | director. |

Washington: | government printing office. | 1880.

Paper cover bearing title as above within a border; inner title same, no border, verso blank; the report, pp. 3-62. 8°. Map. This description applies to one-half



of the edition only; the other 1,000 copies have no map or paper cover, but were bound in dark red cloth, with the following half-title in gilt on the front cover: First annual report | of the | U. S. geological survey | King, 1880

The only other changes from the original issue are of pagination and running heading on versos, which is changed from "Report of the secretary of the interior" to uniformity with the recto heading—"United States geological survey." The map accompanying the paper-cover quota is entitled "Map showing geographical divisions of the U. S. geological survey, 1880." The "colored areas indicate divisions now [then] organized," all of which are west of the 102d meridian.

Sold by the secretary of the interior, by authority of a joint resolution approved March 3, 1887, for 50 cents.

All the forms of this survey report thus far described were probably printed from the same plates, the type being long primer, with subreports, tables, etc., in brevier. By order of the secretary of the interior there were published 1,000 additional copies of the report, as follows:

First annual report | of the | United States geological survey | to the | hon. Carl Schurz, | secretary of the interior. | By | Clarence King, | director. |

Washington: | government printing office. | 1880.

Paper cover bearing title as above within a border; inner title same, no border, verso blank; text, pp. 3-79. Royal 8°. Map, as in the other separate.

The matter was partly, at least, reset, subreports appearing in long primer also, instead of in brevier. The type page is practically the same size as in the earlier separate, but the work is printed on sheets of royal octavo size.

I have seen the same separate bound in the customary dark red cloth, without a paper cover, showing that there were two styles of issue, as was the case with the smaller separate, but I have been unable to ascertain the number of copies issued of each style; the survey requisition merely called for 1,000 copies.

This report was prepared by Mr. King in the fall of 1880 while engaged in survey work in California, and was transmitted to the secretary of the interior from San Francisco. The Washington office not having been fully organized, and there being no special person to supervise the preparation of the survey reports, Mr. King thought it best to submit his report in type; therefrom a private edition of 500 copies was printed; title and collation as follows:

First | annual report | of the | U. S. geological survey | to the | hon. Carl Schurz, | secretary of the interior. | By | Clarence King, | director.

[San Francisco, Cal.: 1880.]

Paper cover bearing title as above; inner title same, verso blank; the report, pp. 3-77. 8°.

## SECOND ANNUAL REPORT, 1880-1881.

47th congress, | 1st session. | House of representatives. | Ex. doc. 1, | part 5. | Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the first session of the forty-seventh congress. | In four volumes. | Volume III. |

Washington: | government printing office. | 1882.

Paper cover with title as above; inner title same, verso blank; half-title, "Report of the director of the United States geological survey", verso blank; letter of transmittal, p. iii, verso blank; table of contents (including list of illustrations), pp. v-x; text (including half-titles of individual papers), pp. xi-lv, 1-565; index, pp. 567-588. Royal 8°. Plates I-LXI; figs. 1-32; 1 map in pocket. Plate xxxvi, opposite p. 162, is wrongly numbered xxxv.

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This edition consisted of 1,900 copies, the "usual number." Of these, about 800 were, as is customary, delivered unbound, as described above; the remainder were printed later and bound in sheep as vol. II of the "Executive documents of the house of representatives for the first session of the forty-seventh congress."

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the first session of the forty-seventh congress. | In four volumes. | Volume III. |

Washington: | government printing office. | 1882.

Title as above, verso blank; half-title and remainder of collation and the contents as in the preceding edition.

This is the 3,000 edition; bound in black cloth. Another edition as follows:

Annual report | of the | secretary of the interior | on the | operations of the department | for | the year ended June 30, 1881. | In four volumes. | Volume III. |

Washington: | government printing office. | 1882.

Title as above, verso blank; half-title and remainder of collation and the contents as in the preceding editions.

This edition consisted of 750 copies, ordered by the secretary of the interior for distribution by the department; bound in dark red cloth. Another edition as follows:

Second annual report | of the | United States geological survey | to the | secretary of the interior | 1880-'81 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1882

Title as above, verso blank; half-title and remainder of collation and the contents as in the preceding editions, with the exception that this edition has on pp. 565-566 a "Postscript on graphic table," followed by an additional plate (LXII), entitled "Graphic table for computation of thermic correction."

This edition, ordered by joint resolution of congress approved August 5, 1882, consisted of 11,000 copies; bound in dark red cloth.

The second annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$1.80.

One hundred copies of this report were divided into the separate papers of which it is composed and the separates issued with the following titles, etc.:

SEPARATES FROM THE SECOND ANNUAL.

Second annual report | of the | United States geological survey | to the | secretary of the interior | 1880-'81 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1882

Paper cover with title as above; half-title, "Report of the director of the United States geological survey," verso blank; letter of transmittal, p. iii, verso blank; text, pp. xi-lv. Royal 8°. Plates I-VII and fig. 1. (Plates VIII and IX of the volume accompany administrative reports, of which there were no separate issues.) 100 copies.

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geological survey—1880-81 | [Survey design] |

Washington | government printing office | 1882



Paper cover with title as above; half-title, "Contributions to the history of Lake Bonneville, by G. K. Gilbert," p. 167, verso blank; text, pp. 169-200. Royal 8. Plates XXXVII-XLIII; figs. 17-21. 100 copies.

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Washington | government printing office | 1882

Paper cover with title as above; half title, "Abstract of report on geology and mining industry of Leadville, Lake county, Colorado, by S. F. Emmons," p. 201, verso blank; text, pp. 203-290. Royal 8. Plates XLIV and XLV, which are located between pp. 240 and 241. 350 copies—the usual quota of 100 and an additional lot of 250 ordered by the secretary of the interior.

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Some separates were ordered by the author and issued in advance of the main volume; these have title and collate as follows:

Abstract of a report | upon the | geology and mining industry | of | Leadville, Colorado, | with | two colored plates. | By | S. F. Emmons, | geologist-in-charge | Rocky mountain division, U. S. geological survey. | Extract from the annual report of the director of the U. S. geological survey | transmitted December 1, 1881. |

Washington: | government printing office. | 1882.

Paper cover with title as above; "With the compliments of S. F. Emmons," verso blank, 1 l.; title as above, verso blank; list of contents, verso blank; the two colored plates; half-title, "Abstract of report on geology and mining industry of Leadville, Lake county, Colorado, by S. F. Emmons," p. 201, verso blank; text, pp. 203-290. Royal 8°. Plates XLIV and XLV. 250 copies.

Later the author ordered an additional lot; these collate thus:

Paper cover, with title nearly identical with that of the regular official separate; inner title same, verso blank; list of contents, verso blank; text, pp. 203-290. Royal 8°. Plates XLIV and XLV, between pp. 240 and 241. 200 copies.

Department of the interior—U. S. geological survey | J. W. Powell director | A summary | of the | geology of the Comstock lode | and the | Washoe district | by | George F. Becker | Extract from the annual report of the director of the U. S. geological survey—1880-81 | [Survey design] |

Washington | government printing office | 1882

Paper cover with title as above; half-title, "A summary of the geology of the Comstock lode and the Washoe district, by George F. Becker," p. 291, verso blank; two colored plates; text, pp. 293-330. Royal 8°. Plates XLVI and XLVII; figs. 22-26. 100 copies.

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Department of the interior—U. S. geological survey | J. W. Powell director | Production | of the | precious metals | in | the United States | by | Clarence King | Extract from the annual report of the director of the U. S. geological survey—1880-81 | [Survey design] |

Washington | government printing office | 1882

Paper cover with title as above; half-title, "Production of the precious metals in the United States, by Clarence King," p. 331, verso blank; letter of transmittal (dated New York, November 1, 1881), pp. 333-335, verso blank; text, pp. 337-401. Royal 8°. Plates XLVIII-LIII. 100 copies.

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Reprinted, with more tabular detail, as: "Department of the interior. Tenth census of the United States. Francis A. Walker, superintendent. Statistics of the production of the precious metals in the United States. By Clarence King, special agent of the census. [Seal of the department of the interior.] Washington: government printing office. 1881." Paper cover with title as above; inner title same, verso blank; table of contents, pp. 5-6; text, pp. 7-94. 4°. Plates A-F, being the same six as in the survey publication.

Appears also, without the plates, as chap. VII of vol. XIII of the Tenth census of the United States, pp. 296-381; Washington, 1885. 4°.

Department of the interior—U. S. geological survey | J. W. Powell  
director | A new method | of | measuring heights | by | means of the  
barometer | by | G. K. Gilbert | Extract from the annual report of the  
director of the U. S. geological survey—1880-81 | [Survey design] |  
Washington | government printing office | 1882

Paper cover with title as above; half-title, "A new method of measuring heights by means of the barometer, by G. K. Gilbert," p. 403, verso blank; text, pp. 405-566. Royal 8°. Plates LIV-LXII; figs. 27-32. 100 copies.

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Two additional lots of these separates were ordered by the department, one of 250 copies in June, 1882, and the other of 350 copies in June, 1883. It is probable that the former of these lots are identical with the regular 100 separates described above, and that the latter—a year later—are like one I have seen which is made up as follows: Cover title as in the regular separates; inner title same, verso blank; contents, differing slightly from those in the regular separate, 1 l., verso blank; text, pp. 405-566; special index to the separate, pp. [i]-iv. Royal 8°. Plates LIV-LXII; figs. 27-32.

### THIRD ANNUAL REPORT, 1881-1882.

47th congress, | 2d session. | House of representatives. | Ex. doc. 1, | part 5. | Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the second session of the forty-seventh congress. | In four volumes. | Volume III. |

Washington: | government printing office. | 1883.

Paper cover with title as above; inner title same, verso blank; half-title, "Report of the director of the United States geological survey," p. iii, verso blank; letter of transmittal, p. [v], verso blank; table of contents, pp. vii-ix, verso blank; list of illustrations, pp. xi-xiii, verso blank; text (including half-titles, contents, etc., of individual papers, and plate explanations), pp. xv-xviii, 1-550; index, pp. 551-564. Royal 8°. Plates I-XXXV and 1-32; 56 figures.

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This edition consisted of 1,900 copies, the "usual number," about 800 of which were delivered unbound, as described above; the remainder were printed later and bound in sheep as vol. 12 of the "Executive documents of the house of representatives for the second session of the forty-seventh congress."

Another edition as follows:

Report of the secretary of the interior; being part of the message and documents communicated to the two houses of congress at the beginning of the second session of the forty-seventh congress. In four volumes. Volume III.

Washington: government printing office. 1883.

Advertisement of the publications of the survey, pp. [i]-ii; title as above, verso blank; half-title and remainder of collation and the contents as in the preceding edition.

This is the 3,000 edition; bound in black cloth. Another edition as follows:

Annual report of the secretary of the interior on the operations of the department for the year ended June 30, 1882. In four volumes. Volume III.

Washington: government printing office. 1883.

Advertisement of the publications of the survey, pp. [i]-ii; title as above, verso blank; half-title and remainder of collation and the contents as in the previous editions.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

Third annual report of the United States geological survey to the secretary of the interior 1881-'82 by J. W. Powell director [Survey design]

Washington: government printing office 1883

Advertisement of the publications of the survey, pp. [i]-ii; title as above, verso blank; half-title and remainder of collation and the contents as in the preceding editions.

This edition, ordered by joint resolution approved August 5, 1882, consisted of 11,000 copies; bound, as usual, in dark red cloth, but 50 copies were delivered in paper covers.

The third annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$2.21.

One hundred copies of this report were divided into the separate papers composing the volume and the separates issued with the following titles:

#### SEPARATES FROM THE THIRD ANNUAL.

Third annual report of the United States geological survey to the secretary of the interior 1881-'82 by J. W. Powell director [Survey design]

Washington: government printing office 1883

Paper cover bearing title as above; inner title same, verso blank; half-title, "Report of the director of the United States geological survey," p. iii, verso blank; letter of transmittal to the secretary, p. [v], verso blank; table of contents (of the whole volume), pp. vii-ix, verso blank; list of illustrations (of the whole volume), pp. xi-xiii, verso blank; text, being the director's own report and the administrative reports of chiefs, pp. xv-xviii, 1-41, verso blank; half-title for accompanying papers, p. 43, verso blank. Royal 8°. Plates I and II; figs. 1 and 2. 100 copies.

Department of the interior—U. S. geological survey | J. W. Powell director | Birds with teeth | by | Othniel Charles Marsh | Extract from the third annual report of the director—1881-82 | [Survey design] |

Washington | government printing office | 1883

Paper cover with title as above; half-title, "Birds with teeth, by professor O. C. Marsh," p. 45, verso blank; contents (including illustrations), pp. 47-48; text, pp. 49-88. Royal 8°. Figs. 3-33. 350 copies—100 regular separates and an additional lot of 250 ordered by the author.

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Department of the interior—U. S. geological survey | J. W. Powell director | The | copper-bearing rocks | of | lake Superior | by | Roland Duer Irving | Extract from the third annual report of the director—1881-82 | [Survey design] |

Washington | government printing office | 1883

Paper cover with title as above; half-title, "The copper-bearing rocks of lake Superior, by Roland Duer Irving," p. 89, verso blank; contents (including illustrations), pp. 91-92; text, pp. 93-188. Royal 8°. Plates III-XVII; figs. 34-43. 100 copies.

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Washington | government printing office | 1883

Paper cover with title as above; half-title, "Sketch of the geological history of lake Lahontan, a Quaternary lake of northwestern Nevada, by Israel C. Russell," p. 189, verso blank; contents, p. 191, verso blank; illustrations, p. 193, verso blank; text, pp. 195-235. Royal 8°. Plates XVIII-XXIII; figs. 44-56. 100 copies.

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Washington | government printing office | 1883

Paper cover with title as above; half-title, "Abstract of report on geology of the Eureka district, Nevada, by Arnold Hague," p. 237, verso blank; contents and illus-



rations, p. 239, verso blank; text, pp. 241-290. Royal 8°. Plates xxiv and xxv. 100 copies.

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Department of the interior—U. S. geological survey | J. W. Powell director | Abstract of report | on the | geology of the Eureka district | Nevada | by | Arnold Hague | Extract from the annual report of the director of the U. S. geological survey—1881-82 | [Survey design] |

Washington | government printing office | 1883

Collation and contents as given above for the regular separates. 150 copies.

Department of the interior—U. S. geological survey | J. W. Powell director | Preliminary paper | on the | terminal moraine | of the | second glacial epoch | by | Thomas Chrowder Chamberlin | Extract from the third annual report of the director—1881-82 | [Survey design] |

Washington | government printing office | 1883

Paper cover with title as above; half title, "Preliminary paper on the terminal moraine of the second glacial epoch, by Thomas C. Chamberlin," p. 291, verso blank; contents and illustrations, pp. 293-294; text, pp. 295-402. Royal 8°. Plates xxxvi-xxxv. 100 copies.

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Department of the interior—U. S. geological survey | J. W. Powell director | A review | of the | non-marine fossil mollusca | of | North America | by | Charles A. White | Extract from the third annual report of the director—1881-82 | [Survey design] |

Washington | government printing office | 1883

Paper cover with title as above; half-title, "A review of the non-marine fossil mollusca of north America, by C. A. White, m. d.," p. 403, verso blank; letter of transmittal, pp. 405-406; contents, p. 407, verso blank; illustrations, p. 409, verso blank; text, pp. 411-486; plate explanations, pp. 488, 490, 492, and the consecutive even numbers (versos) to and including 550, the recto in each case being blank. Royal 8°. Plates 1-32, each composed of a number of figures. 100 copies.

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Besides the regular separates of the last paper, described above, there was a special preliminary issue, as follows:

Department of the interior—U. S. geological survey | J. W. Powell director | A review | of the | non-marine fossil mollusca | of | North America | by | Charles A. White | Extract from the annual report of the director of the U. S. geological survey—1881-82 | [Survey design] |

Washington | government printing office | 1883 | 5478

Paper cover with title as above; inner title same, verso blank; contents, p. iii; illustrations, p. iv; letter of transmittal, pp. 3-4; text, pp. 5-80; plate explanations, pp. 82, 84, 86, and the consecutive even numbers (versos) to and including 144, the recto in each case being blank; index, pp. i-iii. Royal 8°. Plates 1-32, each composed of a number of figures. 100 copies. The number "5478" appearing at the end of the title is doubtless the requisition number.

#### • FOURTH ANNUAL REPORT, 1882-1883.

48th congress, | 1st session. | House of representatives. | Ex. doc. 1, | part 5. | Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the first session of the forty-eighth congress. | In four volumes. | Volume III. |

Washington: | government printing office. | 1883.

Paper cover with title as above; inner title same, verso blank; half-title, "Report of the director of the United States geological survey," p. iii, verso blank; letter of transmittal, p. v, verso blank; table of contents, pp. vii-ix, verso blank; list of illustrations, pp. xi-xii; text (including half-titles, contents, etc., of individual papers, and plate explanations), pp. xiii-xxxii, 1-464; index, pp. 465-473. Royal 8°. Plates I-LXXXV; figs. 1-15.

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This edition consisted of 1,900 copies, the "usual number," about 800 of which were delivered unbound, as described above; the remainder were printed later and bound in sheep, in which form they constitute vol. 12 of the "Executive documents of the house of representatives for the first session of the forty-eighth congress."

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the first session of the forty eighth congress. | In four volumes. | Volume III. |

Washington: | government printing office. | 1883.

Title as above, verso blank; half title and remainder of collation and the contents as in the preceding edition.

This edition consisted of 3,000 copies; bound in black cloth. Another edition as follows:

Annual report | of the | secretary of the interior | on the | operations of the department | for | the year ended June 30, 1883. | In four volumes. | Volume III. |

Washington: | government printing office. | 1883.

Title as above, verso blank; half-title and remainder of collation and the contents as in the preceding editions.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

Fourth annual report | of the | United States geological survey | to the | secretary of the interior | 1882-'83 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1884

Title as above, verso blank; half-title and remainder of collation and the contents as in the preceding editions.

This edition, ordered by joint resolution approved June 27, 1884, consisted of 15,500 copies; bound, as usual, in dark red cloth.

The fourth annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$1.32.

One hundred and ten copies of this volume were divided into the separate papers composing it and the separates issued with the following titles:

#### SEPARATES FROM THE FOURTH ANNUAL.

Fourth annual report | of the | United States geological survey | to the | secretary of the interior | 1882-'83 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1884

Paper cover with title as above; inner title same, verso blank; half title, "Report of the director of the United States geological survey," p. iii, verso blank; letter of transmittal to the secretary, p. v, verso blank; contents (of the whole volume), pp. vii-ix; illustrations (of the whole volume), pp. xi-xii; text, being the director's own report and the administrative reports of the heads of divisions, pp. xiii-xxxii, 1-72; half-title for accompanying papers, which page (recto) is numbered "73-74." Royal 8°. Map (plate 1) and figs. 1 and 2. 110 copies.



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 ordnance corps U. S. a. | Extract from the fourth annual report of the  
 director—1882-83 | [Survey design] |

Washington | government printing office | 1884

Paper cover with title as above; half-title, "Hawaiian volcanoes, by capt. Clarence  
 Edward Dutton, ordnance corps, U. S. a.," p. "75-76," verso blank; contents, p. "77-  
 78," verso blank; illustrations, p. "79-80," verso blank; text, pp. 81-219. Royal 8°.   
 Plates II-XXX; figs. 3-5. 210 copies—110 regular separates and 100 extras ordered  
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Department of the interior—U. S. geological survey | J. W. Powell  
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reka district Nevada | by | Joseph Story Curtis | Extract from the  
fourth annual report of the director—1882-83 | [Survey design] |

Washington | government printing office | 1884

Paper cover with title as above; half-title, "Abstract of a report on the mining  
geology of the Eureka district, Nevada, by Joseph Story Curtis," p. 221, verso blank;  
contents and illustrations, p. 223, verso blank; letter of transmittal to the director  
by G. F. Becker, geologist in charge (dated San Francisco, June 1, 1883), pp. 225-  
226; text, pp. 227-251. Royal 8°. Plates xxxi-xxxiii. 110 copies.

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Washington | government printing office | 1884

Paper cover with title as above; half-title, "Popular fallacies regarding precious-  
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verso blank; text, pp. 257-271. Royal 8°. 110 copies.

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Department of the interior—U. S. geological survey | J. W. Powell  
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| a comparison of the fossil with the living forms | by | Charles A.  
White, m. d. | with appendices by prof. Angelo Heilprin and mr. John

A. Ryder | Extract from the fourth annual report of the director—  
1882-83 | [Survey design] |

Washington | government printing office | 1884

Paper cover with title as above; half-title, "A review of the fossil Ostreidæ," etc., p. 273, verso blank; contents, p. 275, verso blank; illustrations, p. 277, verso blank; letter of transmittal to the director, pp. 279-280; text by White, pp. 281-308; appendix I, by Heilprin, pp. 309-316; appendix II, by Ryder, pp. 317-333; explanation of plates, pp. 334, 336, 338, and consecutive even pages to and including 430, the recto in each case being blank. Royal 8°. Plates XXXIV-LXXXII, most of them composed of several figures each. 160 copies—110 regular separates and 50 extras ordered by the author.

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Washington | government printing office | 1884

Paper cover with title as above; half-title, "A geological reconnaissance in south-  
ern Oregon, by Israel C. Russell," p. 431, verso blank; contents and illustrations, p.  
433, verso blank; text, pp. 435-464. Royal 8°. Plates LXXXIII-LXX: v; figs. 6-15,  
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the message and documents | communicated to the | two houses of con-



gress | at the | beginning of the second session of the forty-eighth congress. | In four volumes. | Volume III. |

Washington: | government printing office. | 1884.

Paper cover with title as above; inner title same, verso blank; half-title, "Report of the director of the United States geological survey," p. iii, verso blank; letter of transmittal, p. v, verso blank; contents, pp. vii-x; illustrations, pp. xi-xv; text, with half-titles, contents, etc., of individual papers, pp. xvii-xxxvi, 1-452; index, pp. 453-469. Royal 8°. Plates I-LVIII (I and II being maps in pocket); figures 1-143.

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This edition consisted of 1,900 copies, the "usual number," about 800 of which were delivered unbound, as described above; the remainder were printed later and bound in sheep, in which form they constitute vol. 13 of the "Executive documents of the house of representatives for the second session of the forty-eighth congress."

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the second session of the forty-eighth congress. | In four volumes. | Volume III. |

Washington: | government printing office. | 1884.

Title as above, verso blank; half-title and remainder of collation, and the contents, same as in the edition previously described.

This edition consisted of 3,000 copies; bound in black. Another edition as follows:

Report | of the | secretary of the interior | for the | fiscal year ending June 30, 1884. | In four volumes. | Volume III. |

Washington: | government printing office. | 1884.

Title as above, verso blank; half-title and remainder of collation, and the contents, same as in the editions previously described.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

Fifth annual report | of the | United States geological survey | to the | secretary of the interior | 1883-'84 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1885

Title as above, verso blank; half-title and remainder of collation, and the contents, as in the other editions.

This edition, ordered by joint resolution approved June 27, 1884, consisted of 15,500 copies; bound in dark red cloth.

The fifth annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$1.95.

One hundred and ten copies of this edition were divided into the separate papers composing the volume, and the separates issued with the following titles:

## SEPARATES FROM THE FIFTH ANNUAL.

Fifth annual report | of the | United States geological survey. | to  
the | secretary of the interior | 1883-'84 | by | J. W. Powell | director |  
[Survey design] |

Washington | government printing office | 1885

Paper cover with title as above; inner title same, verso blank; half-title, "Report of the director of the United States geological survey," p. iii, verso blank; letter of transmittal to the secretary, p. v, verso blank; contents, pp. vii-x; illustrations, pp. xi-xv, verso blank; report of the director, pp. xvii-xxxvi; administrative reports of chiefs, pp. 1-66. Royal 8°. Plates I and II (being maps in pocket). 110 copies.

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Half-title as above, verso beginning of text; text (headed "The general map"), pp. 36-38. 8°. Accompanied by a geologic map of the United States about 17½ by 28½ inches in size within the borders.

200 copies of both text and map, published by the department of the interior for gratuitous distribution.

These three pages of text (36-38) are extracted from the fifth annual, and the geologic map is the same as plate II of that annual. The color scheme on p. 36 of this separate, however, differs from that on p. 36 of the volume, and does not conform to the colors actually used on these 200 maps, which are identical in coloring with the volume map; and the map is printed on heavier paper than the folding map for the pocket of the volume. Moreover, 100 of the maps have wide margins. But there were published, in addition, 25 copies of the map (heavier paper, narrow margins) with colors conforming to those named in this separate. And further, there was issued one copy of the map (now in Mr. McGee's possession) in eleven sheets, one for each color.

Department of the interior—U. S. geological survey | J. W. Powell, director | The topographic features | of | lake shores | by | Grove K. Gilbert | (Extract from the fifth annual report of the director, 1883-'84.) | [Survey design] |

Washington | government printing office | 1885

Paper cover with title as above; general half-title for papers accompanying, p. 67, verso blank; half-title, "The topographic features of lake shores, by G. K. Gilbert," p. 69, verso blank; contents, p. 71, verso blank; illustrations, p. 73, verso blank; text, pp. 75-123. Royal 8°. Plates III-XX; figs. 1-6. 310 copies—110 regular separates and 200 extras ordered by the author.

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Washington | government printing office | 1885

Paper cover with title as above; half-title, "The requisite and qualifying conditions of artesian wells, by Thomas C. Chamberlin," p. 125, verso blank; contents, pp. 127-128; illustrations, p. 129, verso blank; text, pp. 131-173. Royal 8°. Plate XXI; figs. 7-31. 610 copies—110 regular separates and 500 extras ordered by the author.

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Washington | government printing office | 1885

Paper cover with title as above; half-title, "Preliminary paper on an investigation of the Archaean formations of the northwestern states, by R. D. Irving," p. 175, verso blank; contents, p. 177, verso blank; illustrations, pp. 179-180; text, pp. 181-242. Royal 8°. Plates xxii-xxxI (the last two composed of several figures each); figs. 32-35. 210 copies—110 regular separates and 100 extras ordered by the author.

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Washington | government printing office | 1885

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Washington | government printing office | 1885

Paper cover with title as above; half-title, "Existing glaciers of the United States, by Israel C. Russell," p. 303, verso blank; contents, p. 305, verso blank; illustrations, p. 307, verso blank; text, pp. 309-355. Royal 8°. Plates XXXII-LV; figs. 138-143. 110 copies.

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Washington | government printing office | 1885

Paper cover with title as above; half-title, "Sketch of paleobotany, by Lester F. Ward," p. 357, verso blank; contents, p. 359, verso blank; illustrations, p. 361, verso blank; text, pp. 363-452; index (to the whole volume), pp. 453-469. Royal 8°. 160 copies—110 regular separates and 50 extras ordered by the author.

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## SIXTH ANNUAL REPORT, 1884-1885.

49th congress, | 1st session. | House of representatives. | Ex. doc.  
1, | part 5. | Report | of the | secretary of the interior; | being part  
of | the message and documents | communicated to the | two houses of  
congress | at the | beginning of the first session of the forty-ninth con-  
gress. | In five volumes. | Volume III. |

Washington: | government printing office. | 1886.

Paper cover bearing title as above; inner title same, verso blank; half-title,  
"Report of the director of the United States geological survey," p. iii, verso blank;  
contents, pp. v-viii; illustrations, pp. ix-xi; letter of transmittal, p. xiii, verso blank;  
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This edition consisted of 1,900 copies, the "usual number," about 800 of which were delivered unbound, as described above; the remainder were printed later and bound in sheep as vol. 13 of the "Executive documents of the house of representatives for the first session of the forty-ninth congress."

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the first session of the forty-ninth congress. | In five volumes. | Volume III. |

Washington: | government printing office. | 1886.

Title as above, verso blank; half-title and remainder of collation and the contents as in the preceding edition.

This edition consisted of 3,000 copies; bound in black cloth. Another edition as follows:

Report | of the | secretary of the interior | for the | fiscal year ending June 30, 1885. | In five volumes. | Volume III. |

Washington: | government printing office. | 1886.

Title as above, verso blank; half-title and remainder of collation and the contents as in the preceding editions.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

Sixth annual report | of the | United States geological survey | to the | secretary of the interior | 1884-'85 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1885

Title as above, verso blank; half-title and remainder of collation and the contents as in the other editions.

This edition, ordered by joint resolution approved March 2, 1885, consisted of 15,500 copies; bound, as usual, in dark red cloth.

The sixth annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$1.67.

One hundred copies of this report were divided into the papers composing the volume and the separates issued with the following titles:

#### SEPARATES FROM THE SIXTH ANNUAL.

Sixth annual report | of the | United States geological survey | to the | secretary of the interior | 1884-'85 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1885

Paper cover with title as above; inner title same, verso blank; half-title, "Report of the director of the United States geological survey," p. iii, verso blank; contents (of the whole volume), pp. v-viii; illustrations (of the whole volume), pp. ix-xi, verso blank; letter of transmittal, p. xiii, verso blank; report of the director, pp. xv-xxix; administrative reports of chiefs, pp. 1-101. Royal 8°. Plates II-X. (Plate I is a map in pocket, and though pertaining to this portion of the volume, it does not accompany these separates.) 100 copies.

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report of the director, 1884–85 | [Survey design] |

Washington | government printing office | 1886

Paper cover with title as above; half-title, "Mount Taylor and the Zuñi plateau,  
by capt. Clarence E. Dutton, ordnance corps, U. S. a.," p. "105–106," verso blank;  
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from the sixth annual report of the director, 1884-85 | [Survey design | |  
Washington | government printing office | 1886

Paper cover with title as above; half-title, "Preliminary paper on the driftless  
area of the upper Mississippi valley, by T. C. Chamberlin and R. D. Salisbury," p.  
199, verso blank; table of contents, pp. 201-202; illustrations, p. 203, verso blank;  
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Paper cover with title as above; half-title, "The quantitative determination of silver by means of the microscope, by Joseph Story Curtis," p. 323, verso blank; contents, p. 325, verso blank; illustrations, p. 327, verso blank; text, pp. 329–352. Royal 8°. Plate xxx; figs. 49 and 50. 300 copies—100 regular separates and 200 extras ordered by the author.

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Paper cover with title as above; half-title, "Preliminary report on sea-coast swamps of the eastern United States, by Nathaniel Southgate Shaler," p. 353, verso blank; contents, p. 355, verso blank; illustrations, p. 357, verso blank; text, pp. 359–398. Royal 8°. Figures 51–57. 200 copies—100 regular separates and 100 extras ordered by the author.

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Department of the interior—U. S. geological survey | J. W. Powell, director | Synopsis | of the | flora of the Laramie group | by | Lester

F. Ward | Extract from the sixth annual report of the director, 1884-85  
 | [Survey design] |  
 Washington | government printing office | 1886

Paper cover with title as above; half-title, "Synopsis of the flora of the Laramie group, by Lester F. Ward," p. 399, verso blank; contents, p. 401, verso blank; illustrations, p. 403, verso blank; text, pp. 405-549; list of species illustrated, pp. 549-557. Royal 8°. Plates XXXI-LXV. 100 copies.

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 1. | part 5. | Report | of the | secretary of the interior; | being part of |  
 the message and documents | communicated to the | two houses of con-  
 gress | at the | beginning of the second session of the forty-ninth con-  
 gress. | In five volumes. | Volume III. |  
 Washington: | government printing office. | 1888.

Paper cover with title as above; inner title same, verso blank; half-title, "Seventh annual report of the director of the United States geological survey," p. ii, verso blank; contents, pp. v-xiv; illustrations, pp. xv-xx; letter of transmittal, p. 1, verso blank; text, with half-titles, contents, and illustrations to individual papers, pp. 3-646; index, pp. 647-656. Royal 8°. Plates I-LXXI (I and IV being folded maps in pocket); figs. 1-114.

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Shaler (N. S.), Report on the geology of Martha's vineyard.....	297-363
Irving (R. D.), On the classification of the early Cambrian and pre-Cambrian formations, a brief discussion of principles, illustrated by examples drawn mainly from the lake Superior region.....	365-454
Davis (W. M.), The structure of the Triassic formation of the Connecticut valley.....	455-490
Chatard (E. M.), Salt-making processes in the United States.....	491-535
McGee (W. J.), The geology of the head of Chesapeake bay.....	537-646

This edition consisted of 1,734 copies, the "usual number," about 600 of which were issued unbound, as described above; the remainder were printed later and bound in sheep as vol. 10 of the "Executive documents of the house of representatives for the second session of the forty-ninth congress."

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the mes-  
 sage and documents | communicated to the | two houses of congress |

at the | beginning of the second session of the forty-ninth congress. |  
In five volumes. | Volume III. |

Washington: | government printing office. | 1888.

Advertisement of survey publications, pp. i-iv; library catalogue slips (samples), p. v, verso blank; title as above, verso blank; half-title and remainder of collation, and the contents, as in the edition previously described.

This edition consisted of 3,000 copies; bound in black cloth. Another edition as follows:

Report | of the | secretary of the interior | for the | fiscal year ending June 30, 1886. | In five volumes. | Volume III. |

Washington: | government printing office. | 1888.

Collation and contents as in the 3,000 edition, described next above.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

Seventh annual report | of the | United States geological survey | to the | secretary of the interior | 1885-'86 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1888

Collation and contents as in the 3,000 edition, described above.

This edition, ordered by joint resolution approved March 2, 1885, consisted of 15,500 copies; bound, as usual, in dark red cloth.

The seventh annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$1.60.

One hundred and ten copies of this report were divided into the separate papers composing the volume and the separates issued with the following titles:

#### SEPARATES FROM THE SEVENTH ANNUAL.

Seventh annual report | of the | United States geological survey | to the | secretary of the interior | 1885-'86 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1888

Paper cover with title as above; inner title the same, verso blank; half-title, "Seventh annual report of the director of the United States geological survey," p. iii, verso blank; contents (of the whole volume), pp. v-xiv; illustrations (of the whole volume), pp. xv-xx; letter of transmittal to the secretary, p. 1, verso blank; report of the director, pp. 3-42; half-title to administrative reports of chiefs, p. 43, verso blank; administrative reports of chiefs, pp. 45-143. Royal 8°. Plates I-VII pertain to the text of this separate, but I and IV (being maps in pocket) do not accompany it; the others do. 110 copies.

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 irector, 1885-1886 | [Survey design] |

Washington | government printing office | 1888

Paper cover with title as above; half-title, "The rock-scorings of the great ice  
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Department of the interior—U. S. geological survey | J. W. Powell, director | Obsidian cliff | Yellowstone national park | by | Joseph Paxson Iddings | Extract from the seventh annual report of the director, 1885-1886 | [Survey design] |

Washington | government printing office | 1888

Paper cover with title as above; half-title, "Obsidian cliff, Yellowstone national park, by Joseph P. Iddings," p. 249, verso blank; contents, p. 251, verso blank; illustrations, pp. 253-254; text, pp. 255-295. Royal 8°. Plates ix-xviii; figs. 51-54. 260 copies—110 regular separates and 150 extras ordered by the author.



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Department of the interior—U. S. geological survey | J. W. Powell, director | Report | on the | geology of Martha's vineyard | by | Nathaniel Southgate Shaler | Extract from the seventh annual report of the director, 1885-1886 | [Survey design] |

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Paper cover with title as above; half-title, "Report on the geology of Martha's vineyard, by Nathaniel S. Shaler," p. 297, verso blank; contents, p. 299, verso blank; illustrations, p. 301, verso blank; text, pp. 303-360; appendix (consisting of a report to Prof. Shaler by Henry L. Whiting, of the results of his surveys in Martha's vineyard), pp. 361-363. Royal 8°. Plates XIX-XXIX; figs. 55-63. 210 copies—110 regular separates and 100 extras ordered by the author.

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Paper cover with title as above; half-title, "On the classification of the early Cambrian and pre-Cambrian formations, a brief discussion of principles, illustrated by examples drawn mainly from the lake Superior region, by R. D. Irving," p. 365, verso blank; contents, pp. 367-368; illustrations, pp. 369-370; text, pp. 371-451. Royal 8°. Plates xxx-li; figs. 64-96. 110 copies.

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Department of the interior—U. S. geological survey | J. W. Powell, director | The structure | of the | Triassic formation of the Connecticut valley | by | William Morris Davis | Extract from the seventh annual report of the director, 1885-1886 | [Survey design] |

Washington | government printing office | 1888

Paper cover with title as above; half-title, "The structure of the Triassic formation of the Connecticut valley, by William Morris Davis," p. 455, verso blank; contents, p. 457, verso blank; illustrations, p. 459, verso blank; text, pp. 461-490. Royal 8°. Plate LII; figs. 97-108. 110 copies.

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Paper cover with title as above; half-title, "Salt-making processes in the United  
States, by Thomas M. Chatard," p. 491, verso blank; contents, p. 493, verso blank;  
illustrations, p. 495, verso blank; text, pp. 497-535. Royal 8°. Plates LIII-LV.  
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McGee | Extract from the seventh annual report of the director, 1885-  
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Paper cover with title as above; half-title, "The geology of the head of Chesa-  
peake bay, by W J McGee," p. 537, verso blank; contents, pp. 539-541, verso blank;  
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## EIGHTH ANNUAL REPORT, 1886-1887.

50th congress, | 1st session. | House of representatives. | Ex. doc. 1, | part 5. | Report | of the | secretary of the interior | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the first session of the fiftieth congress. | In five volumes. | Volume III—in two parts. | Part 1 [-2]. |

Washington: | government printing office. | 1889.

Two parts, bound as separate volumes. Part 1: paper cover with title as above; library catalogue slips (sample), verso blank, 1 l.; advertisement of the publications of the survey, pp. i-iv; title as above, verso blank; half-title, "Eighth annual report of the director of the United States geological survey," p. iii, verso blank; contents

(of the two parts), pp. v-xv, verso blank; illustrations (of the two parts), pp. xvii-xix, verso blank; letter of transmittal to the secretary, verso blank; text, including half-titles, tables of contents, and lists of illustrations of individual papers, also plate explanations, pp. [3]-474; index to part 1, pp. i-xii. Royal 8°. Plates 1-1111 (1 being a map in pocket); figs. 1-22.

Part 2 has the following additional title:

Eighth annual report | of the | United States geological survey | to  
the | secretary of the interior | 1886-'87 | by | J. W. Powell | director |  
Part II | [Survey design] |

Washington | government printing office | 1889

Part 2: paper cover with title as in part 1; first inner title same, verso blank; second inner title as given next above, verso blank; text, with half-titles, tables of contents, and lists of illustrations of individual papers, pp. 475-1061; index to part 2, p. 1063. Royal 8°. Plates LIV-LXXVI; figs. 23-45.

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This edition consisted of 1,734 copies, the "usual number," about 600 of which were delivered unbound, as described above; the remainder were printed later and bound in sheep as vol. 12 (in two parts) of the "Executive documents of the house of representatives for the first session of the fiftieth congress."

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the mes-  
sage and documents | communicated to the | two houses of congress |  
at the | beginning of the first session of the fiftieth congress. | In five  
volumes. | Volume III—in two parts. | Part 1 [- 2]. |

Washington: | government printing office. | 1889.

This edition collates precisely like the unbound quota of the previous edition, except, of course, that there are no paper covers, and its contents are the same. The title beginning "Eighth annual report" is found in part 2.

This edition consisted of 3,000 copies; bound in black cloth. Another edition as follows:

Report | of the | secretary of the interior | for the | fiscal year ending  
June 30, 1887. | In five volumes. | Volume III—in two parts. | Part 1  
[- 2]. |

Washington: | government printing office. | 1889.

Collation and contents as in the 3,000 edition, described next above.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

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Part I [- II] | [Survey design] |

Washington | government printing office | 1889



Two parts, bound as two volumes. Part I: library catalogue slips (sample), verso blank, 1 l.; advertisement of the publications of the survey, pp. i-iv; title as above, verso blank; half-title, "Eighth annual report of the director of the United States geological survey," p. iii, verso blank; contents (of both parts), pp. v-xv, verso blank; illustrations (of both parts), pp. xvii-xix, verso blank; letter of transmittal to the secretary, p. [1], verso blank; text, with half-titles, contents, illustrations, and plate explanations of individual papers, pp. [3]-474; index to part I, pp. i-xii. Plates I-LIII (I being a map in pocket); figs. 1-22. Part II: title as above, verso blank; text, with half-titles, contents, etc., of individual papers, pp. 475-1061, verso blank; index to part II, p. 1063. Plates LIV-LXXVI; figs. 23-45. Royal 8°. Contents as in the earlier editions.

This edition, ordered by concurrent resolution of the senate adopted by the house July 29, 1888, consisted of 15,500 copies; bound, as usual, in dark red cloth.

The eighth annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$2.60.

One hundred and ten copies of this report were divided into the separate papers composing it and the separates issued with the following titles:

#### SEPARATES FROM THE EIGHTH ANNUAL.

Eighth annual report | of the | United States geological survey | to  
the | secretary of the interior | 1886-'87 | by | J. W. Powell | director |  
[Survey design] |

Washington | government printing office | 1889

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C. Russell | Extract from the eighth annual report of the director,  
1886-'87 | [Survey design] |

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50th congress, | 2d session. | House of representatives. | Ex. doc. 1, | part 5. | Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the second session of the fiftieth congress | In six volumes. | Volume IV. |

Washington: | government printing office. | 1889.

Paper cover with title as above; library catalogue slips (sample), verso blank, 1 l.; advertisement of the publications of the survey, pp. i-iv; title as above, verso blank; half-title, "Ninth annual report of the director of the United States geological survey," p. iii, verso blank; contents, pp. v-viii; illustrations, pp. ix-xiii, verso blank; letter of transmittal to the secretary, p. 1, verso blank; text, pp. 3-712; index, pp. 713-717. Royal 8°. Plates I-LXXXVIII; figs. 1-61.

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This edition consisted of 1,734 copies, the "usual number," about 600 of which were delivered unbound, as described above; the remainder were printed later and bound in sheep, in which form they constitute vol. 13 of the "Executive documents of the house of representatives for the second session of the fiftieth congress," and have three titles, as follows:

*First title:* The | executive documents | of the | house of representatives | for the | second session of the fiftieth congress. | 1888-'89. | Volume 13. |

Washington: | government printing office. | 1890.

*Second title:* 50th congress, | 2d session. | House of representatives. | Ex. doc. 1, | part 5. | Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the second session of the fiftieth congress | In six volumes. | Volume IV. |

Washington: | government printing office. | 1889.

*Third title:* Ninth annual report | of the | United States geological survey | to the | secretary of the interior | 1887-'88 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1889

First title above, verso blank; second title above, verso blank; sample library catalogue slips, 1 p., verso blank; advertisement of the publications of the survey, pp. i-iv; third title above, verso blank; half-title, contents, illustrations, etc., as in the unbound quota. About 1,100 copies.

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the second session of the fiftieth congress. | In six volumes. | Volume IV. |

Washington: | government printing office. | 1889.

Collation precisely like that of the unbound quota of the previous edition, except, of course, that there is no paper cover, and the contents are the same.

This edition consisted of 3,000 copies; bound in black cloth. Another edition as follows:

Annual report | of the | secretary of the interior | for the | fiscal year ending June 30, 1888. | In six volumes. | Volume IV. |

Washington: | government printing office. | 1889.

Collation and contents as in the 3,000 edition, described next above.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

Ninth annual report | of the | United States geological survey | to the | secretary of the interior | 1887-'88 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1889

Library catalogue slips (sample), verso blank, 1 l.; advertisement of the publications of the survey, pp. i-iv; title as above, verso blank; half-title, "Ninth annual report of the director of the United States geological survey," p. iii, verso blank; contents, pp. v-viii; illustrations, pp. ix-xiii; letter of transmittal to the secretary, p. 1, verso blank; text, with half-titles, contents, etc., of individual papers, pp. 3-712; index, pp. 713-717. Royal 8°. Plates I-LXXXVIII; figs. 1-61. Contents as in the earlier editions.

This edition, ordered by concurrent resolution of the senate adopted by the house July 29, 1888, consisted of 15,500 copies; bound, as usual, in dark red cloth.

The ninth annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$1.50.

One hundred and ten copies of this report were divided into the separate papers composing it and the separates issued with the following titles:

#### SEPARATES FROM THE NINTH ANNUAL.

Ninth annual report | of the | United States geological survey | to the | secretary of the interior | 1887-'88 | by | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1889

Paper cover with title as above; inner title same, verso blank; half-title, "Ninth annual report of the director of the United States geological survey," p. iii, verso blank; contents (of the whole volume), pp. v-viii; illustrations (of the whole volume), pp. ix-xiii, verso blank; letter of transmittal of the volume to the secretary, p. 1, verso blank; report of the director, pp. 3-46; half-title to administrative reports of chiefs, p. 47, verso blank; administrative reports of chiefs, pp. 49-199. Royal 8°. Plates I-VI. 110 copies.

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Washington | government printing office | 1890

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Paper cover with title as above; half-title, "Formation of travertine and siliceous sinter by the vegetation of hot springs, by Walter Harvey Weed," p. 613, verso blank; contents, p. 615, verso blank; illustrations, p. 617, verso blank; text, pp. 619-676. Royal 8°. Plates LXXVIII-LXXXVII; figs. 52-56. 260 copies—110 regular separates and 150 extras ordered by the author.

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Washington | government printing office | 1890

Paper cover with title as above; half-title, "On the geology and physiography of a portion of northwestern Colorado and adjacent parts of Utah and Wyoming, by Charles A. White," p. 677, verso blank; contents, p. 679, verso blank; illustrations, p. 681, verso blank; text, pp. 683-712; index (to the whole volume), pp. 713-717. Royal 8°. Plate LXXXVIII; figs. 57-61. 110 copies.

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Washington: | government printing office. | 1890.

Two parts, bound as two volumes. Part I: paper cover with title as above; library catalogue slips (sample), verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; title as above, verso blank; half-title, "Tenth annual report of the director of the United States geological survey, part I—geology," p. iii, verso blank; contents, pp. v-ix, verso blank; illustrations, pp. xi-xv, verso blank; letter of transmittal to the secretary, p. 1, verso blank; text, including half-titles, tables of contents, and lists of illustrations of individual papers, also plate designations and explanations, pp. 3-760; (there are no pp. 761, 762); errata, p. 763, verso



blank; index, pp. 765-774. Plates I-XCVIII (1 being a map in pocket); figs. 1-69. Part II: paper cover with title as above; inner title the same, verso blank; half-title, "Tenth annual report of the director of the United States geological survey, part II—irrigation," p. iii, verso blank; contents, pp. v-vi; abstract, pp. vii-viii; text, pp. 1-119, verso blank; index, pp. 121-123. No illustrations. Royal 8°.

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(A preliminary report of the director of the geological survey, on "the organization and prosecution of the survey of the arid lands for purposes of irrigation," was transmitted to the secretary of the interior December 31, 1888, and by the secretary transmitted to the president pro tempore of the senate January 2, 1889, to be laid before congress. It was printed as senate ex. doc. no. 43, 50th congress, 2d session, 12 pp. 8°; and it is reprinted on pp. 16-29 of part II of the tenth annual.)

This edition consisted of 1,734 copies, the "usual number," about 600 in paper covers as described, the balance printed later and bound in sheep, in which form they constitute vol. 14 (in two parts) of the "Executive documents of the house of representatives for the first session of the fifty-first congress."

Another edition as follows:

Report | of the | secretary of the interior; | being part of | the message and documents | communicated to the | two houses of congress | at the | beginning of the first session of the fifty-first congress. | In five volumes. | Volume IV—in two parts. | Part 1 [-2]. |

Washington: | government printing office. | 1890.

The two parts collate as in the unbound quota of the previous edition, except that there are no paper covers, and their contents are the same.

This edition consisted of 3,000 copies; bound in black cloth. Another edition as follows:

Report | of the | secretary of the interior | for the | fiscal year ending June 30, 1889. | In five volumes. | Volume IV—in two parts. | Part 1 [-2]. |

Washington: | government printing office. | 1890.

Two parts, bound as two volumes. Part I: title as above, verso blank; half-title, contents, and remainder of volume as described under previous editions. Part II: title as above, verso blank; half-title, contents, and remainder of volume as described under previous editions.

This edition consisted of 750 copies; bound in dark red cloth. Another edition as follows:

Tenth annual report | of the | United States geological survey | to the | secretary of the interior | 1888-'89 | by | J. W. Powell | director | Part I—geology [—II—irrigation] | [Survey design] |

Washington | government printing office | 1890

Two parts, bound as two volumes. Part I: Sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; title as above, verso blank; half title, "Tenth annual report of the director of the United States geological survey, part I—geology," p. iii, verso blank; contents, pp. v-ix, verso blank; illustrations, pp. xi-xv, verso blank; letter of transmittal by the director to the secretary of the interior, p. 1, verso blank; text, including half-titles, contents, etc., of individual papers, pp. 3-760; errata, p. 763 [sic], verso blank; index, pp. 765-774. Plates I-XCVIII (1 being a map in pocket); figs. 1-69. Part II: title as above, verso blank; half title, "Tenth annual report of the director of the United States geological survey, part II—irrigation," p. iii, verso blank; contents, pp. v-vi; abstract of this the first irrigation annual report, pp. vii-viii; text, pp. 1-119; index, pp. 121-123. No illustrations. Royal 8°. Contents as in the earlier editions.

There were published of this edition, under resolution of the house concurred in by the senate March 13, 1890, 15,500 copies; bound, as usual, in dark red cloth.

Part II (irrigation), being small and not illustrated, and needed for the immediate information and use of congress, was put in type and a few hundred copies delivered to the survey some months in advance of the main portion of the edition. These were in paper covers, the main title being repeated on the front cover.

The tenth annual is sold by the secretary of the interior, under authority of a joint resolution approved March 3, 1887, at the price of \$2.80 for both parts.

One hundred and ten copies of part I of this report were divided into the separate papers composing it, and the separates issued with the following titles:

#### SEPARATES FROM THE TENTH ANNUAL.

Tenth annual report | of the | United States geological survey | to the | secretary of the interior | 1888-'89 | by | J. W. Powell | director | Part I—geology | [Survey design] |

Washington | government printing office | 1890

Paper cover with title as above; inner title the same, verso blank; half-title, "Tenth annual report of the director of the United States geological survey, part I—geology," p. iii, verso blank; contents (of the whole volume), pp. v-ix, verso



blank; illustrations (of the whole volume), pp. xi-xv, verso blank; letter of transmittal of the volume to the secretary, p. 1, verso blank; report of the director, pp. 3-80; half-title to administrative reports of chiefs, p. 81, verso blank; administrative reports of chiefs, pp. 83-252. Royal 8°. 110 copies.

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Paper cover with title as above; half-title, "General account of the fresh-water morasses of the United States, with a description of the Dismal swamp district of Virginia and North Carolina, by Nathaniel Southgate Shaler," p. 255, verso blank; contents, p. 257, verso blank; illustrations, pp. 259-260; text, pp. 261-339. Royal 8°. Plates VI-XIX; figs. 2-38. 110 copies.

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Washington | government printing office | 1890

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Paper cover with title as above; half-title, "The fauna of the lower Cambrian or Olenellus zone, by Charles D. Walcott," p. 509, verso blank; contents, pp. 511-512; illustrations, pp. 513-514; text, pp. 515-658; half-title, "Plates," p. 659, verso blank; explanations of plates, pp. 662, 664, 666, and consecutive even pages (versos) to and including p. 760, the recto in each case containing the word "Plate," and its number as a half-title; errata (for the whole volume), p. 763, verso blank; index (for the whole volume), pp. 765-774. Royal 8°. Plates XLIII-XCVIII; figs. 44-69. 110 copies.

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I have not seen a copy of the message and documents edition (3,000), nor of the departmental edition (750). Survey edition as follows:

Eleventh annual report | of the | United States geological survey |  
to the | secretary of the interior | 1889-'90 | by | J. W. Powell | direc-  
tor | Part I—geology [—II—irrigation] | [Survey design] |

Washington | government printing office | 1891

Two parts, bound as two volumes. Part I: sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; title as above, verso blank; half-title, "Eleventh annual report of the director of the United States geological survey, part I—geology," p. iii, verso blank; contents, pp. v-x; illustrations, pp. xi-xv, verso blank; letter of transmittal, p. [1], verso blank; text, with half-titles, contents, etc., to individual papers, pp. 3-742; index, pp. 743-757. Plates I-LXVI; figs. 1-120. Part II: title as above, verso blank; half-title, "Eleventh annual report of the director of the United States geological survey, part II—irrigation," p. iii, verso blank; contents, pp. v-vii, verso blank; illustrations, p. ix, verso blank; abstract of this report, pp. xi-xiv; text, with half-



titles to individual papers, pp. 1-388; index, pp. 389-395. Royal 8°. Plates LXVII-XCVI; figs. 121-124.

At this writing, part I of this report has not been issued, the preparation of illustrations causing delay, but I have seen a copy in unbound form and from it composed the foregoing description.

One hundred and ten copies of part I of this report were divided into the separate papers composing it, and the separates issued with the following titles:

#### SEPARATES FROM THE ELEVENTH ANNUAL.

Eleventh annual report | of the | United States geological survey |  
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 by W J McGee, geologist in charge, pp. 587-588; introduction, by W J McGee, pp.  
 589-616; text, pp. 617-742. Royal 8°. Plates LXII-LXVI. 110 copies.



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52d congress, | 1st session. | House of representatives. | Ex. doc. 1,  
 | part 5. | Report | of the | secretary of the interior; | being part of |  
 the message and documents | communicated to the | two houses of  
 congress | at the | beginning of the first session of the fifty-second con-  
 gress. | In five volumes. | Volume IV—in two parts. | Part 1 [-2]. |  
 Washington: | government printing office. | 1892.

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I have not seen a copy of the message and documents edition (3,000), nor of the departmental edition (750). Survey edition as follows:

Twelfth annual report | of the | United States geological survey | to  
 the | secretary of the interior | 1890-'91 | by | J. W. Powell | director |  
 Part I—geology [-II—irrigation] | [Survey design] |  
 Washington | government printing office | 1891

Two parts, bound as two volumes. Part I: sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; title as above, verso blank; half-title, "Twelfth annual report of the director of the United States geological survey, part I—geology," p. iii, verso blank; contents, pp. v-viii; illustrations, pp. ix-xiii, verso blank; letter of transmittal, p. 1, verso blank; text, with half-titles, contents, etc., to individual papers, pp. 3-664; index, pp. 665-675. Plates I-LIII; figs 1-81. Part II: title as above, verso blank; half-title, "Twelfth annual report of the director of the United States geological survey, part II—irrigation," p. iii, verso blank; contents, pp. v-viii; illustrations, p. ix-xiv; abstract of this report, pp. xv-xviii; text, with half-titles, contents, etc., to individual papers, pp. 1-561; financial statement, pp. 562-568; index, pp. 569-576. Royal 8°. Plates LIV-CXLVI; figs. 81-270.

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#### SEPARATES FROM THE TWELFTH ANNUAL.

Twelfth annual report | of the | United States geological survey | to  
the | secretary of the interior | 1890-'91 | by | J. W. Powell | director |  
Part I—geology | [Survey design] |  
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## MONOGRAPH II.

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Washington | government printing office | 1882

*Special title:* United States geological survey | J. W. Powell director | Tertiary history | of the | Grand cañon district | with atlas | by Clarence E. Dutton | captain of ordnance U. S. a. | [Survey design] |

Washington | government printing office | 1882

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Washington 1882 | Julius Bien & co. lith. New York



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3,050 copies of both text and atlas published, being the 3,000 required by law and 50 extras ordered of the public printer by the author; bound in dark maroon cloth. Sold by the director of the U. S. geological survey at \$10 for both parts.

Documentary edition as follows:

48th congress, | 2d session. | House of representatives. | Mis. doc. | no. 35. | Department of the interior | Monographs | of the | United States geological survey | Volume II | [Seal of the department of the interior] |

Washington | government printing office | 1885

Title as above on paper cover; inner title same, verso blank; then follow special title, letter of transmittal, preface, and remainder of volume as collated for the other edition. Atlas as follows:

48th congress, | 2d session. | House of representatives. | Mis. doc. | no. 35. | Department of the interior | United States geological survey | J. W. Powell director | Atlas | to accompany the monograph | on the | Tertiary history | of the | Grand cañon district | by | capt. Clarence E. Dutton U. S. a. | [Survey design]

[Washington: government printing office. 1885.]

The atlas of this edition is identical with that of the earlier edition except in binding and cover title. This atlas is not bound, but the sheets are laid loosely inside a heavy-paper cover, on the front of which the above half-title appears.

1,900 copies of text and atlas; published under a joint resolution approved March 2, 1885; about 800 of which were delivered unbound, as described; the remainder

were, as usual, bound in sheep as vol. 11 of the "Miscellaneous documents of the house of representatives for the second session of the forty-eighth congress," the 23 atlas-sheets being folded quarto size and laid loosely inside half-sheep covers.

MONOGRAPH III.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume III | [Seal of the department of the interior] |

Washington | government printing office | 1882

*Special title:* United States geological survey | Clarence King director | Geology | of the | Comstock lode and the Washoe district | with atlas | by George F. Becker | [Survey design] |

Washington | government printing office | 1882

Advertisement of survey publications, pp. i-ii; general title as above, verso blank; special title as above, verso blank; letter of transmittal, p. iii, verso blank; preface, pp. v-vii, verso blank; contents, p. ix, verso blank; list of illustrations (in the text), p. xi, verso blank; list of atlas-sheets, p. xiii, verso blank; brief outline of results, p. xv, verso blank; text, pp. 1-404; note to chap. iii, pp. 405-408; index to mining claims, pp. 409-412; general index, pp. 413-422. 4<sup>o</sup>. Plates I-VII; figs. 1-33.

Mr. King's name appears on the title-page of this monograph because it was projected and work on it was begun under his directorship.

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A volume of atlas sheets accompanies the text, as follows:

*Half-title:* United States geological survey | Clarence King director | Atlas | to accompany the | geology of the Comstock lode | and the | Washoe district | Becker | [Geologist's hammers crossed]

*Title:* Department of the interior | United States geological survey | Clarence King director | Atlas | to accompany the monograph | on the | geology | of the | Comstock lode | and the | Washoe district | by | George F. Becker | [Survey design] |

Washington | 1882 | Julius Bien & co. lith. New York

Half-title as above in gilt on front cover; XXI engraved sheets, of which I, II, XII, and XXI are single, the others double, I bearing the title as given above, and II the contents, verso of both blank. The double sheets measure, from edge to edge, about 33 by 20 inches. The full list is as follows:

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Vertical cross-sections of the Comstock lode, through the Combination, Yellow jacket, Belcher, and Savage shafts.....	VII
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3,075 copies of both text and atlas published, the 3,000 required by law and 75 extras ordered of the public printer by the author; bound in dark maroon cloth. Monograph III is sold by the director of the survey at cost price, \$11 for both parts.

Documentary edition as follows:

47th congress, | 1st session. | House of representatives. | Mis. doc. | no. 52. | Department of the interior | Monographs | of the | United States geological survey | Volume III | [Seal of the department of the interior]

Washington | government printing office | 1882

Title as above on paper cover; advertisement of survey publications, pp. i-ii; inner title same as cover title, verso blank; special title, letter of transmittal, preface, and remainder of volume as collated for the other edition. Atlas as follows:

47th congress, | 1st session. | House of representatives. | Mis. doc. | no. 52. | Department of the interior | Monographs | of the | United States geological survey | Volume III | Atlas | [Seal of the department of the interior] |

Washington | government printing office | 1882

Paper cover with title as above; then follow the XXI engraved sheets as in the other edition, from the same plates.



1,900 copies of text and atlas, the "usual number," published under a joint resolution approved July 7, 1882. Of these, about 800 were delivered in paper covers, as described; the remainder were printed later and bound in sheep as vol. 17 (2 parts) of the "Miscellaneous documents of the house of representatives for the first session of the forty-seventh congress."

MONOGRAPH IV.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume IV | [Seal of the department of the interior] |

Washington | government printing office | 1883

*Special title:* United States geological survey | Clarence King director | Comstock | mining and miners | by Eliot Lord | [Survey design] |

Washington | government printing office | 1883

Advertisement of survey publications, pp. i-ii; general title as above, verso blank; special title as above, verso blank; letter of transmittal, p. vii, verso blank; preface, pp. ix-x; contents (including list of plates), pp. xi-xiv; text, pp. 1-414; appendix (tabular), pp. 415-446; index, pp. 447-451. 4°. Plates I-III. (plate III being the same as plate III of the atlas accompanying monograph III, by Becker).

Mr. King's name appears on the title-page of this monograph because it was projected and work on it begun under his directorship.

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3,000 copies; bound in dark maroon cloth. Issued in the summer of 1884. Monograph IV is sold by the director of the survey at cost price, \$1.50 a copy.

Documentary edition as follows:

47th congress, | 1st session. | House of representatives. | Mis. doc. | no. 51. | Department of the interior | Monographs | of the | United States geological survey | Volume IV | [Seal of the department of the interior] |

Washington | government printing office | 1883

Paper cover with title as above; advertisement of the publications of the survey, pp. i-ii; general title as on cover, verso blank; then follow special title, letter of transmittal, preface, and remainder of volume as collated above for the other edition.

1,900 copies, the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, about 800 were delivered unbound, as described; the remainder were printed later and bound in sheep, in which form they constitute vol. 16 of the "Miscellaneous documents of the house of representatives for the first session of the forty-seventh congress."

### MONOGRAPH V.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume v | [Seal of the department of the interior] |

Washington | government printing office | 1883

*Special title:* United States geological survey | Clarence King director | The | copper-bearing rocks | of | lake Superior | by Roland Duer Irving | [Survey design] |

Washington | government printing office | 1883

General title as above, verso blank; special title as above, verso blank; letter of transmittal by Raphael Pumpelly, in charge of division of mining geology, to the director, p. v, verso blank; letter of transmittal by the author to Raphael Pumpelly, p. vii, verso blank; contents, p. ix, verso blank; illustrations, pp. xi-xvi; text, pp. 1-430; notes, pp. 431-446; index, pp. 447-464. 4°. Plates I-XXIX; figs. 1-37.

Mr. King's name appears on the title-page of this monograph because it was projected and work on it was begun under his directorship.

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3,000 copies; bound in dark maroon cloth. Monograph v is sold by the director of the survey at \$1.85 a copy, cost price.

Documentary edition as follows:

47th congress, | 1st session. | House of representatives. | Mis. doc. | no. 50. | Department of the interior | Monographs | of the | United

States geological survey | Volume v | [Seal of the department of the interior] |

Washington | government printing office | 1884

Title as above, verso blank; then follow special title, letters of transmittal, and remainder of volume as collated above for the other edition.

1,900 copies, the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, about 800 were delivered unbound, as described; the remainder were printed later and bound in sheep, in which form they constitute vol. 15 of the "Miscellaneous documents of the house of representatives for the first session of the forty-seventh congress."

## MONOGRAPH VI.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume VI | [Seal of the department of the interior] |

Washington | government printing office | 1883

*Special title:* United States geological survey | J. W. Powell director | Contributions | to the knowledge of the | older Mesozoic flora of Virginia | by William Morris Fontaine | [Survey design] |

Washington | government printing office | 1883

General title as above, verso blank; special title as above, verso blank; letter of transmittal to the director, p. v, verso blank; contents, p. vii, verso blank; illustrations, pp. ix-xi, verso blank; text, pp. 1-128; explanation of plates, pp. 129-140; index, pp. 141-144; plates I-LIV, facing each of which is its explanation, recto blank, these explanations being a repetition of those on pp. 129-140. 4°.

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3,000 copies; bound in dark maroon cloth. Sold by the director of the survey at the price of \$1.05 a copy, its actual cost as estimated by the public printer.

Documentary edition as follows:

47th congress, | 2d session. | House of representatives. | Mis. doc. | no. 43. | Department of the interior | Monographs | of the | United States geological survey | Volume VI | [Seal of the department of the interior] |

Washington | government printing office | 1883

Paper cover with title as above; inner title same, verso blank; special title, letter of transmittal, contents, and remainder of volume as in the other edition.

1,900 copies, the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these about 800 were delivered unbound, as described; the remainder were printed later and bound in sheep, in which form they constitute vol. 14 of the "Miscellaneous documents of the house of representatives for the second session of the forty-seventh congress."



## MONOGRAPH VII.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume VII | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | Silver-lead deposits | of | Eureka Nevada | by Joseph Story Curtis | [Survey design] |

Washington | government printing office | 1884

General title as above, verso blank; special title as above, verso blank; letter of transmittal by G. F. Becker, in charge of Pacific division, to the director, p. v, verso blank; contents, p. vii, verso blank; illustrations, p. ix, verso blank; preface, pp. xi-xii; brief outline of results, p. xiii, verso blank; text, pp. 1-193, verso blank; index, pp. 195-200. 4°. Plates I-XVI; figs. 1-10.

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3,125 copies published, being the 3,000 required by the law relating to these monographs, and 125 extras ordered of the public printer by the author. Bound in dark maroon cloth. Sold by the director of the survey at \$1.20 per copy, cost price.

Documentary edition as follows:

48th congress, | 1st session. | House of representatives. | Mis. doc. | no. 72. | Department of the interior | Monographs | of the | United States geological survey | Volume VII | [Seal of the department of the interior] |

Washington | government printing office | 1884

Paper cover with title as above; inner title same, verso blank; special title, letter of transmittal, contents, and remainder of volume as in the other edition.

1,900 copies, the "usual number" edition; published under authority of a joint resolution approved July 7, 1892. Of these, about 800 were delivered unbound, as described; the remainder were printed later and bound in sheep, in which form they

constitute vol. 37 of the "Miscellaneous documents of the house of representatives for the first session of the forty-eighth congress."

## MONOGRAPH VIII.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume VIII | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | Paleontology | of | the Eureka district | by Charles Doolittle Walcott | [Survey design] |

Washington | government printing office | 1884

General title as above, verso blank; special title as above, verso blank; letter of transmittal by the author to Mr. Arnold Hague, geologist in charge, p. v., verso blank; letter of transmittal by Mr. Hague to the director, p. vii, verso blank; preface, p. ix, verso blank; contents, p. xi, verso blank; illustrations, p. xiii, verso blank; summary of results, pp. 1-9, verso blank; text, pp. 11-285, verso blank; index, pp. 287-298. 4°. Plates I-XXIV; figs. 1-7. The 24 plates are grouped together after the index, and facing each plate is its explanation; this leaf of explanations, if the latter occupy but a page, precedes the plate and its recto is blank, but if the explanations require both sides of the leaf, the latter follows the plate. The department seal in the general title of this monograph and the later ones differs slightly from that in the earlier ones.

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3,050 copies—being the 3,000 required by the law relating to these monographs, and 50 extras ordered of the public printer by the author. Bound in dark maroon cloth. Sold by the director of the survey at \$1.10 per copy, cost price.

Documentary edition as follows:

48th congress, | 1st session. | House of representatives. | Mis. doc. | no. 73. | Department of the interior | Monographs | of the | United States geological survey | Volume VIII | [Seal of the department of the interior] |

Washington | government printing office | 1884

Title as above verso blank; followed by special title, letters of transmittal, preface, contents, etc., as in the other edition.

1,900 copies, being the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, about 800 were delivered unbound; the remainder were printed later and bound in sheep as vol. 38 of the "Miscellaneous documents of the house of representatives for the first session of the forty-eighth congress."

## MONOGRAPH IX.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume IX | [Seal of the department of the interior] |

Washington | government printing office | 1885

*Special title:* United States geological survey | J. W. Powell director | Brachiopoda and Lamellibranchiata | of the | Raritan clays and green-sand marls | of | New Jersey | by | Robert P. Whitfield | [Survey design] |

Washington | government printing office | 1885

General title as above, verso blank; special title as above, verso blank; contents, p. v, verso blank; illustrations, p. vii, verso blank; letter of transmittal by Geo. H. Cook, state geologist of New Jersey, to the director (which includes a "Sketch of the geology of the Cretaceous and Tertiary formations of New Jersey"), pp. ix-xiii, verso blank; letter of transmittal by the author to Prof. Cook, p. xv, verso blank; preliminary remarks, pp. xvii-xx; half-title, "Brachiopoda and Lamellibranchiata of the Raritan clays and greensand marls of New Jersey, by R. P. Whitfield," p. 1, verso blank; half-title, "Brachiopoda," p. 3, verso blank; text, pp. 5-15, verso blank; half-title, "Lamellibranchiata," p. 17, verso blank; text, pp. 19-252; appendix, pp. 253-264; index, pp. 265-269; plate explanations, pp. 270, 272, 274, and each even page consecutively to and including 338, rectos blank, each explanation facing the plate to which it pertains. 4°. Plates i-xxxv; figs. 1 and 2; map in pocket.

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3,000 copies; bound in dark maroon cloth. Sold by the director of the survey at cost price, \$1.15 a copy.

Documentary edition as follows:

48th congress, | 1st session. | House of representatives. | Mis. doc. | no. 74. | Department of the interior | Monographs | of the | United States geological survey | Volume IX | [Seal of the department of the interior] |

Washington | government printing office | 1885

Paper cover with title as above; inner title same, verso blank; special title, contents, illustrations, and remainder of collation as in the other edition.

1,900 copies, the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, about 800 were delivered unbound, as described; the remainder were printed later and bound in sheep, in which form they constitute vol. 39 of the "Miscellaneous documents of the house of representatives for the first session of the forty-eighth congress."



The geological survey of New Jersey purchased of the public printer 1,050 copies, unbound, of this work, and issued them with the following title:

Geological survey of New Jersey | George H. Cook, state geologist | Brachiopoda and Lamellibranchiata | of the | Raritan clays and greensand marls | of | New Jersey | by | Robert P. Whitfield | [Seal of the state of New Jersey] |

John L. Murphy | State Gazette printing office, Trenton, N. J. | 1886

Title as above, verso blank; contents, illustrations, letters of transmittal, and remainder of the work precisely as collated above except that page xiii, which contains the closing portion of the letter of transmittal of Geo. H. Cook, state geologist of New Jersey, was reset for the purpose of changing the address of the letter to "His excellency Leon Abbett, governor and ex-officio president of the board of managers of the geological survey of New Jersey."

# MONOGRAPH X.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume x | [Seal of the department of the interior] |

Washington | government printing office | 1886

*Special title:* United States geological survey | J. W. Powell, director | Dinocerata | a | monograph | of an | extinct order of gigantic mammals | by | Othniel Charles Marsh | [Survey design] |

Washington | government printing office | 1886

General title as above, verso blank; special title as above, verso blank; letter of transmittal, dated December 18, 1884, verso blank; table of contents, p. vii, verso blank; illustrations (list of plates and list of woodcuts), pp. ix-xvi; preface, pp. xvii-xviii; introduction, pp. 1-10; text, pp. 11-191, verso blank; appendix: synopsis of dinocerata, pp. 193-223, verso blank, and bibliography, pp. 225-237, verso blank; index, pp. 239-243. 4°. Plates I-LVI; figs. 1-200. The plates are assembled after the index. Six of them (I, IX, XXVII, XLI, XLII, LV) are double, and one (LVI) is dissected and mounted on cloth, it being about 23½ by 16½ inches in size. Preceding each plate is a leaf bearing on verso the plate explanation and on recto the plate number.

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3,000 copies, the number required by the law relating to these monographs; bound in dark maroon cloth. Sold by the director of the survey at \$2.70 a copy, cost price. Documentary edition as follows:

49th congress, | 1st session. | House of representatives. | Mis. doc. | no. 305. | Department of the interior | Monographs | of the | United States geological survey | Volume x | [Seal of the department of the interior] |

Washington | government printing office | 1886

Paper cover with general title as above; inner title same, verso blank; special title, letter of transmittal, and remainder of collation as in the other edition.

1,900 copies, the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, a portion (about 800) were delivered unbound, as described; the remainder were printed later and bound in sheep, in which form they constitute a part of vol. 2 of the "Miscellaneous documents of the house of representatives for the first session of the forty-ninth congress."

To save trouble and delay in transmitting proof-sheets back and forth between himself and the government printing office at Washington, the author procured a font of pica type, such as is used by that office in the monographs of the survey, and had the material put in type at New Haven and electrotyped, and from these plates had, by permission of the director, 500 large-paper copies struck off for his own use in advance of the official edition, which was somewhat delayed; titles and collation as follows:

*Half-title:* Dinocerata | a | monograph | of an | extinct order of gigantic mammals | by | Othniel Charles Marsh

*Title:* United States geological survey | Volume x | Dinocerata | a | monograph | of an | extinct order of gigantic mammals | by | Othniel Charles Marsh | [Survey design] |

Washington | 1884

Half-title as above on board cover; title as above, verso blank; letter of transmittal to the director, dated Dec. 18, 1884, p. v, verso blank; table of contents, p. vii, verso blank; lists of illustrations, pp. ix-xvi; preface, pp. xvii-xviii; introduction, pp. 1-10; text, pp. 11-191; appendix, pp. 193-223; bibliography of dinocerata, pp. 225-237; followed by plates I-LVI, each preceded by a leaf bearing on verso the plate explanation and on recto the plate number. No index. The text and appendix contain 200 wood-cuts. The size of the type page is about the same as that of the official editions, but the paper used is considerably larger, a leaf measuring about 10½ by 14 inches.

These 500 copies were issued in three forms of binding: the first lot with paste-board covers and half-title thereon, as described above, another lot in green cloth, and the remainder in half-morocco.

#### MONOGRAPH XI.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XI | [Seal of the department of the interior] |

Washington | government printing office | 1885

*Special title:* United States geological survey | J. W. Powell director | Geological history | of | lake Lahontan | a Quaternary lake of northwestern Nevada | by | Israel Cook Russell | [Survey design] |

Washington | government printing office | 1885

General title as above, verso blank; special title as above, verso blank; letter of transmittal to the director by G. K. Gilbert, geologist in charge of the division of the Great basin, p. v, verso blank; preface, pp. vii-viii; contents, pp. ix-xi, verso blank; illustrations, pp. xiii-xiv; text, pp. 1-283, verso blank; index, pp. 285-288. 4°. Plates I-XLVI (the last one being a folded map in pocket of cover); figs. 1-36.

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3,025 copies published, the 3,000 required by law and 25 extras ordered by the author. Sold by the director of the survey at \$1.75 a copy, the cost of publication.

Documentary edition as follows:

49th congress, | 1st session. | House of representatives. | Mis. doc. | no. 304. | Department of the interior | Monographs | of the | United States geological survey | Volume XI | [Seal of the department of the interior] |

Washington | government printing office | 1885

Paper cover bearing title as above; inner title same, verso blank; then follow special title, letter of transmittal, preface, and remainder of volume as collated above for the other edition.

1,900 copies, being the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, a portion (about 600) were delivered unbound, as described; the remainder were printed later and bound in sheep as a portion of vol. 2 of the "Miscellaneous documents of the house of representatives for the first session of the forty-ninth congress."

MONOGRAPH XII.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XII | [Seal of the department of the interior] |

Washington | government printing office | 1886

*Special title:* United States geological survey | Clarence King, director | Geology | and | mining industry | of | Leadville, Colorado | with atlas | by | Samuel Franklin Emmons | [Survey design] |

Washington | government printing office | 1886

General title as above, verso blank; special title as above, verso blank; letter of transmittal by the author to J. W. Powell, director, p. v, verso blank; preface, pp. vii-xi, verso blank; contents (of the whole volume), pp. 13-23, verso blank; list of illustrations (in the volume of text), pp. xxv-xxvi; list of atlas sheets, pp. xxvii-xxviii; brief outline of results, p. xxix, verso blank; half-title to part I, p. 1, verso blank; text of part I, pp. 3-313, verso blank; half-title of appendix A, p. 315, verso blank; contents of appendix A (repeated), pp. 317-318; text of appendix A, pp. 319-362; half-title to part II, p. 363, verso blank; contents of part II (repeated), p. 365; list of illustrations of part II (repeated), p. 366; text of part II, pp. 367-584; half-title of appendix B, p. 585, verso blank; contents of appendix B (repeated), p. 587, verso blank; text of appendix B, pp. 589-608; half-title of appendix C, p. 609, verso blank; contents of appendix C (repeated), pp. 611-612; text of appendix C, pp. 613-747, verso blank; plates XXIII-XLV (which pertain to appendix C); list of metallurgical plates (also contained, in an abridged form, in the general list of illustrations at the beginning of the volume), pp. 749-750; index of letters used on plates (xxiii-xlv), p. 751, verso blank; index (to the whole volume), pp. 753-770. 4°. Plates I-XLV; figs. 1-6.

Mr. King's name appears on the title-page of this monograph because it was projected and work on it was begun under his directorship.

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A volume of atlas sheets accompanies the text, as follows.

Department of the interior | United States geological survey | Clarence King director | Atlas | to accompany a monograph | on the | geology and mining industry | of | Leadville | Colorado | by | Samuel Franklin Emmons | [Survey design] |

Washington | 1883 | Julius Bien & co. lith. New York

This atlas consists of 35 engraved sheets; paper cover. Sheets I-III, V, X, XV-XX, XXIV-XXXV, are double; sheets IV, VI-IX, XI-XIV, XXI-XXIII, single. A double sheet measures, from edge to edge, about 33 by 20 inches. Sheet I contains the title, as given above; sheet II, contents; sheet III, legend; then follow topographic and geologic maps and sections, mostly colored, as listed below. The paper cover bears an engraved title very nearly identical with that on sheet I, but enough variations can be detected to show that it is from another plate.

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3,100 copies of both text and atlas published -- being the 3,000 required by the law relating to these monographs and 100 extras ordered by the author; the text is bound in dark maroon cloth; the atlas sheets are laid loosely inside a paper cover. Of a portion of the 100 extras, the volume of text was issued in two separately bound parts, part I ending with p. 362, and part II commencing with p. 363 -- preceding which, however, are the general and special titles, as in part I. The atlas is identical with the atlas of the regular edition except the paper cover, which in these 100 differs not only in color but to such an extent in particularities of the title it bears as to lead to the conclusion that the title was printed from still another plate.



Monograph XII is sold by the director of the survey at \$8.40 for both parts, the cost of publication.

Documentary edition as follows:

49th congress, | 1st session. | House of representatives. | Mis. doc. | no. 397. | Department of the interior | Monographs | of the | United States geological survey | Volume XII | [Seal of the department of the interior] |

Washington | government printing office | 1886

Paper cover bearing title as above; inner title same, verso blank; special title, letter of transmittal, preface, and remainder of collation as in the 3,000 edition.

I have not seen a copy of the atlas accompanying the unbound portion of this edition of the text.

1,900 copies, being the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, a portion were delivered in paper covers, as described; the remainder were bound in sheep as vol. 27 of the "Miscellaneous documents of the house of representatives for the first session of the forty-ninth congress," the 35 atlas-sheets being folded quarto size and laid loosely inside half-sheep covers.

### MONOGRAPH XIII.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XIII | [Seal of the department of the interior] |

Washington | government printing office | 1888

*Special title:* United States geological survey | J. W. Powell, director | Geology | of the | quicksilver deposits | of the | Pacific slope | with an atlas | by | George F. Becker | [Survey design] |

Washington | government printing office | 1888

Advertisement of the publications of the survey, pp. i-iv; general title as above, verso blank; special title as above, verso blank; letter of transmittal by the author to the director, p. v, verso blank; contents, p. vii, verso blank; illustrations (in the volume of text), p. ix, verso blank; list of atlas sheets, p. xi, verso blank; preface, pp. xiii-xv, verso blank; brief outline of results, pp. xvii-xix, verso blank; text, pp. 1-475, verso blank; index, pp. 477-486. 4°. Plates I-VII; figs. 1-20.

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An atlas accompanies the text, as follows:

Department of the interior | United States geological survey | J. W. Powell director | Atlas | to accompany a monograph | on the geology of | the quicksilver deposits | of | the Pacific slope | by | George F. Becker. | [Survey design] |

Washington 1887 | Giles litho. & liberty printing co. N. Y.

This atlas consists of 14 sheets, laid loosely inside a paper cover bearing title as given above. Sheet I, title as above; sheet II, contents; the remaining 12 sheets are topographic and geologic maps and sections and plans of mine workings, as listed below. Sheets I-IV, VI, VIII, XII-XIV, are single; sheets V, VII, IX-XI, double. A double sheet measures, from edge to edge, about 34 by 22 inches.

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3,000 copies, the number required by the law relating to these monographs; text bound in dark maroon cloth; atlas sheets laid loosely inside paper cover. Monograph XIII is sold by the director of the survey at \$2 for both parts, the cost of publication.

Documentary edition as follows:

50th congress, | 1st session. | House of representatives. | Mis. doc. | no. 610. | Department of the interior | Monographs | of the | United States geological survey | Volume XIII | [Seal of the department of the interior] |

Washington | government printing office | 1888

General title as above, verso blank; special title, letter of transmittal, contents, illustrations, and remainder of collation as in the other edition. Atlas as follows:

50th congress, | 1st session. | House of representatives. | Mis. doc. | no. 610. | Department of the interior | United States geological survey | J. W. Powell director | Atlas | to accompany a monograph | on the geology of | the quicksilver deposits | of | the Pacific slope | by | George F. Becker. | [Survey design] |

Washington 1887 | Giles litho. & liberty printing co. N. Y.

Consists of 14 sheets, laid loosely inside a paper cover bearing title as given above. The 14 sheets are identical with those of the other edition, being from the same plates.

1,734 copies of both text and atlas, the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these a portion (about 600) were delivered unbound, as described above, while the remainder were, as usual, bound in sheep as vol. 24 of the "Miscellaneous documents of the house of representatives for the first session of the fiftieth congress."

I have not seen a copy of the atlas accompanying the bound portion of the edition.

## MONOGRAPH XIV.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XIV | [Seal of the department of the interior] |

Washington | government printing office | 1888

*Special title:* United States geological survey | J. W. Powell, director | Fossil fishes and fossil plants | of the | Triassic rocks | of | New Jersey and the Connecticut valley | by | John S. Newberry | [Survey design] |

Washington | government printing office | 1888

Advertisement of the publications of the survey, pp. i-iv; sample library catalogue slips, p. v, verso blank; general title as above, verso blank; special title as above, verso blank; contents, pp. v-vi; illustrations, pp. vii-viii; letter of transmittal, p. ix, verso blank; preface, pp. xi-xiv; half-title, "Part I, geological relations of the Triassic rocks of New Jersey and the Connecticut valley," p. [1], verso blank; text, pp. 3-15, verso blank; half-title, "Part II, fossil fishes of the Triassic rocks of New Jersey and the Connecticut valley," p. 17, verso blank; text, pp. 19-76; half-title, "Part III, fossil plants of the Triassic rocks of New Jersey and the Connecticut valley," p. 77, verso blank; text, pp. 79-95, verso blank; half-title, "Plates," verso blank, pp. [97-98]; "Plate I," verso explanation of same, pp. [99]-100 (followed by plate I); "Plate II," verso explanation of same, pp. [101]-102 (followed by plate II); etc. consecutively to "plate XXVI," verso explanation of same, pp. [149]-150 (followed by plate XXVI); index, pp. 151-152. 4°. Plates I-XXVI.

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3,000 copies, the number required by law; bound in dark maroon cloth. Sold by the director of the survey at \$1 a copy, the cost of publication.

Documentary edition as follows:

50th congress, | 1st session. | House of representatives. | Mis. doc. | no. 611. | Department of the interior | Monographs | of the | United States geological survey | Volume XIV | [Seal of the department of the interior] |

Washington | government printing office | 1888

Paper cover bearing title as above; advertisement of the publications of the survey, pp. i-iv; library catalogue slips, p. v, verso blank; title as above, verso blank; special title, contents, illustrations, and remainder of collation as in the other edition.

1,734 copies, the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, about 600 were issued unbound, as described above; the remainder were printed later and bound in sheep as vol. 25 of the "Miscellaneous documents of the house of representatives for the first session of the fiftieth congress."

MONOGRAPH XV.

General title: Department of the interior | Monographs | of the | United States geological survey | Volume xv—text | [Seal of the department of the interior] |

Washington | government printing office | 1889

*Special title:* United States geological survey | J. W. Powell, director | The Potomac | or | younger Mesozoic flora | by | William Morris Fontaine | [Survey design] |

Washington | government printing office | 1889

Sample library catalogue slips, 1 l., verso blank; advertisement of the publications of the survey, pp. i-iv; general title as above, verso blank; special title as above, verso blank; contents, verso blank; illustrations, pp. vii-xii; letter of transmittal to the director, pp. xiii-xiv; text, pp. 1-348; half-title, "Tables," p. 349; the tables, being lists of species and localities, pp. 350-372; index, pp. 373-377. 4<sup>c</sup>.

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Department of the interior | Monographs | of the | United States geological survey | Volume xv—plates | [Seal of the department of the interior] |

Washington | government printing office | 1889

General title as above, verso blank; special title as with the volume of text, verso blank; illustrations (being the same list as appears in the volume of text), pp. v-x; half-title, "Plates," verso blank; then follow 180 plates, each preceded by a leaf bearing on verso the plate explanation and on recto the plate number. 4<sup>c</sup>. Plates i-CLXXX; LXXIII, LXXV, and CXIV are double, the others single.

3,000 copies of both text and plates published, being the number required by the law relating to these monographs; bound in dark maroon cloth. Sold by the director of the survey at \$2.50 for both parts, the cost of their publication.

Another edition as follows:

50th congress, | 2d session. | House of representatives. | Mis. doc. 147, | part 1. | Department of the interior | Monographs | of the |

United States geological survey | Volume xv—text | [Seal of the department of the interior] |

Washington | government printing office | 1889

Paper cover bearing title as above; sample library catalogue slips, 1 l., verso blank; advertisement of the publications of the survey, pp. i-iv; title as on cover repeated, verso blank; special title, lists of contents and illustrations, and remainder of volume as in the other edition. Plates in a separate volume, as follows:

50th congress, | 2d session. | House of representatives. | Mis. doc. 147, | part 2. | Department of the interior | Monographs | of the | United States geological survey | Volume xv—plates | [Seal of the department of the interior] |

Washington | government printing office | 1889

Paper cover bearing title as above; first inner title the same, verso blank; then follow special title, list of illustrations, half-title, and plates as in the other edition.

1,734 copies of both text and atlas, being the "usual number" edition, about 600 of which were issued in paper covers, as described; the remainder were printed later and bound in sheep (text and plates in a single volume) as vol. 17 of the "Miscellaneous documents of the house of representatives for the second session of the fiftieth congress."

#### MONOGRAPH XVI.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XVI | [Seal of the department of the interior] |

Washington | government printing office | 1889

*Special title:* United States geological survey | J. W. Powell, director | The Paleozoic fishes | of | North America | by | John Strong Newberry | [Survey design] |

Washington | government printing office | 1889

General title as above, verso blank; special title as above, verso blank; contents, p. 5, verso blank; illustrations, pp. 7-9, verso blank; letter of transmittal to the director, p. 11, verso blank; introduction, pp. 13-15, verso blank; half-title, "Part I, fishes of the upper Silurian rocks" p. 17, verso blank; text, pp. 19-20; half-title, "Part II, fishes of the Devonian age," p. 21, verso blank; text, pp. 23-74; half-title, "Part III, fishes of the Carboniferous system," p. 75, verso blank; text, pp. 77-228; half-title, "Plates," verso blank, pp. [229-230]; "Plate I," verso explanation of same, pp. [231]-232 (followed by plate I); "Plate II," verso explanation of same, pp. [233]-234 (followed by plate II); etc., consecutively to "Plate LIII," verso explanation of same, pp. [335]-336 (followed by plate LIII); index, pp. 337-340, 4°. Plates I-LIII; figs. 1-3.

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3,000 copies, the number required by the law relating to these monographs; bound in dark maroon cloth. Sold by the director of the survey at \$1 a copy, cost of publication.

Documentary edition as follows:

51st congress, | 1st session. | House of representatives. | Mis. doc. | no. 249. | Department of the interior | Monographs | of the | United States geological survey | Volume XVI | [Seal of the department of the interior] |

Washington | government printing office | 1890

Paper cover bearing title as above; sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-iv; title as on cover, verso blank; special title, contents, illustrations, and remainder of collation as in the other edition.

1,734 copies, being the "usual number" edition; published under authority of a joint resolution approved July 7, 1882. Of these, a portion (about 600) were delivered in paper covers, as described; the remainder were printed later and bound in sheep as vol. 37 of the "Miscellaneous documents of the house of representatives for the first session of the fifty-first congress."

## MONOGRAPH XVII.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XVII | [Seal of the department of the interior] |

Washington | government printing office | 1892

*Special title:* United States geological survey | J. W. Powell, director | The flora | of the | Dakota group | a posthumous work | by | Leo Lesquereux | Edited by F. H. Knowlton | [Survey design] |

Washington | government printing office | 1891

Sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; general title as above, verso blank; special title as above, verso blank; contents, pp. 5-6; illustrations, pp. 7-10; letter of transmittal to the director by Prof. Lester F. Ward, p. 11, verso blank; editor's preface, pp. 13-18; introduction, pp. 19-22; text, pp. 23-256; half-title, "Plates," verso blank, pp. [257-258]; half-title, "Plate I," verso explanation of same, pp. [259]-260 (followed by plate I); half title, "Plate II," verso explanation of same, pp. [261]-262 (followed by plate II); etc., consecutively to "Plate LXVI," verso explanation of same, pp. [389]-390 (followed by plate LXVI); index, pp. 391-400. 4°. Plates I-LXVI.

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3,000 copies, the number required by the law relating to these monographs; bound in dark maroon cloth. Sold by the director of the survey at \$1.10 a copy, cost price.

Documentary edition as follows:

52d congress, | 1st session. | House of representatives. | Mis. doc. | no. 60. | Department of the interior | Monographs | of the | United States geological survey | Volume XVII | [Seal of the department of the interior] |

Washington | government printing office | 1892

No cover; sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; general title as above, verso blank; special title, contents, illustrations, letter of transmittal, and remainder of volume as described under the previous edition.

1,734 copies, the "usual number" edition; published in pursuance of a joint resolution approved July 7, 1882. Of these, a portion (about 600) were delivered unbound, as described; the remainder were printed later and bound in sheep as vol. 29 of the "Miscellaneous documents of the house of representatives for the first session of the fifty-second congress."

#### MONOGRAPH XVIII.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XVIII | [Seal of the department of the interior] |

Washington | government printing office | 1892

*Special title:* United States geological survey | J. W. Powell, director | Gasteropoda and Cephalopoda | of the | Raritan clays and greensand marls | of | New Jersey | by | Robert Parr Whitfield | [Survey design] |

Washington | government printing office | 1892

Sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; general title as above, verso blank; special title as above, verso blank; contents, p. 5, verso blank; illustrations, pp. 7-8; letter of transmittal to the director by Geo. H. Cook, state geologist of New Jersey, p. [9], verso blank, letter of transmittal to Professor Cook by the author, p. 11, verso blank preliminary remarks by the author, pp. 13-15, verso blank; half-title "Gasteropoda," p. 17, verso blank; text, pp. 19-239, verso blank; half-title "Cephalopoda," p. 241, verso blank; text, pp. 243-295, verso blank; half-title "Plates," verso blank, pp. [297-298]; half-title "Plate I," verso explanation of same, pp. [299]-300 (followed by plate I); half title "Plate II," verso explanation of same, pp. [301]-302 (followed by plate II); etc. consecutively to half-title "Plate L," verso explanation of same pp. [397]-398 (followed by plate L); index, pp. 399-402. 4°. Plates I-L; figs. and 2.

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3,000 copies, the number required by law; bound in dark maroon cloth. Monograph XVIII is sold by the director of the survey at \$1 a copy, the cost of its publication.

Documentary edition as follows:

52d congress, | 1st session. | House of representatives, | Mis. doc. | no. 77. | Department of the interior | Monographs | of the | United States geological survey | Volume XVIII | [Seal of the department of the interior] |

Washington | government printing office | 1892

No cover; general title as above on white paper; sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; special title, contents, illustrations, letters of transmittal, and remainder of volume as described under the previous edition.

1,734 copies, the "usual number" edition; published in pursuance of a joint resolution approved July 7, 1882. Of these, about 600 were delivered unbound, as described; the remainder were printed later and bound in sheep as vol. 30 of the "Miscellaneous documents of the house of representatives for the first session of the fifty-second congress."

# MONOGRAPH XIX.

*General title:* Department of interior | Monographs | of the | United States geological survey | Volume XIX | [Seal of the department of the interior] |

Washington | government printing office | 1892

*Special title:* United States geological survey | J. W. Powell director | The | Penoque iron-bearing series | of | Michigan and Wisconsin | by | Roland Duer Irving | and | Charles Richard Van Hise | [Survey design] |

Washington | government printing office | 1892

Sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; general title as above, verso blank; special title as above, verso blank; contents, pp. v-vii, verso blank; illustrations, pp. ix-xii; letter of transmittal by Van Hise, pp. xiii-xv, verso blank; outline of the monograph, pp. xvii-xix, verso blank; introduction, pp. 1-4; text, pp. 5-474; half title, "Plate XIV," p. 475; explanation of plate XIV, p. 476; followed by the plate; half title, "Plate xv," p. 477; explanation of plate xv, p. 478, followed by the plate; etc. consecutively with half-titles on odd pages and explanations of plates on even pages to "Plate XXXVII," p. 521; explanation of plate XXXVII, p. 522, followed by the plate; index, pp. 523-534. 4°. Plates I-XXXVII; figs. 1-12.

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3,000 copies, the number required by the law relating to these monographs; bound in dark maroon cloth.

At this writing monograph XIX is not yet out of press; the foregoing description, therefore, which has been made up from final page proof, should be taken *cum grano salis*. The documentary edition has not, of course, been issued, but I understand the sheep portion will constitute vol. 52 of the miscellaneous documents of the house of representatives for the first session of the fifty-second congress.

## MONOGRAPH XX.

*General title:* Department of the interior | Monographs | of the | United States geological survey | Volume XX | [Seal of the department of the interior] |

Washington | government printing office | 1892

*Special title:* United States geological survey | J. W. Powell, director | Geology | of the | Eureka district, Nevada | with an atlas | by | Arnold Hague | [Survey design] |

Washington | government printing office | 1892

Sample library catalogue slips, verso blank, 11.; advertisement of the publications of the survey, pp. i-v, verso blank; general title as above, verso blank; special title as above, verso blank; contents, p. v, verso blank; illustrations, p. vii; atlas sheets, p. viii; letter of transmittal, p. [ix], verso blank; preface, pp. xi-xiv; outline of volume, pp. xv-xvii, verso blank; text, including appendixes A and B with half-titles, pp. 1-394; explanation of plate III, pp. 395-396, followed by the plate; explanation of plate IV, p. 398, recto blank, followed by the plate; explanation of plate V, p. 400, recto blank, followed by the plate; explanation of plate VI, p. 402, recto blank, followed by the plate; explanation of plate VII, p. 404, recto blank, followed by the plate; explanation of plate VIII, p. 406, recto blank, followed by the plate; index, pp. 407-419. 4°. Plates I-VIII; figs. 1-9.

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Accompanied by an atlas, as follows:

Department of the interior | United States geological survey | Clarence King, director | Atlas | to accompany the monograph | on the | geology | of the | Eureka district | Nevada | by | Arnold Hague | [Survey design] |

Washington | 1883 [*sic*] | Julius Bien & co. lith. New York.

13 sheets, folio (first four single, last nine double), laid loosely inside a granite paper cover bearing title as given above.

The title of this atlas bears Mr. King's name because the monograph was projected and work on it begun under his directorship, and it bears the date 1883 because it was engraved at that time, although the atlas was not issued until the text was ready, in 1892.

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3,000 copies of both text and atlas published, the number required by law; text bound in dark maroon cloth; atlas sheets in paper cover. Monograph XX is sold by the director of the survey at \$5.25 for both parts, the cost of their publication.

Documentary edition as follows:

52d congress, | 1st session. | House of representatives. | Mis. doc. | no 343. | Department of the interior | Monographs | of the | United States geological survey | Volume XX | [Survey design] |

Washington | government printing office | 1892

No cover; general title as above, verso blank; sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso blank; then follow special title, contents, and remainder of volume as collated for the other edition.

The atlas furnished with this edition is identical in title and contents with that accompanying the other edition, the distinguishing mark being that in this edition the atlas cover bears in its upper right corner a pasted slip on which is printed:

52d congress, 1st session. | House of representatives. | Mis. doc. no. 343.

1,734 copies, the "usual number" edition, published under authority of a joint resolution approved July 7, 1882. Of these, a portion (about 600) were issued unbound, as described; the remainder were printed later and bound in sheep as vol. 53 of the "Miscellaneous documents of the house of representatives for the first session of the fifty-second congress."





## BULLETINS.

### BULLETIN 1.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 1 | On hypersthene-andesite and on triclinic pyroxene in augitic | rocks, by Whitman Cross; with a geological sketch of | Buffalo peaks, Colorado, by S. F. Emmons, geologist- | in-charge of Rocky mountain division |

Washington | government printing office | 1883

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 1 | [Seal of the department of the interior] |

Washington | government printing office | 1883

*Special title:* United States geological survey | J. W. Powell director | On | hypersthene-andesite | and on | triclinic pyroxene in augitic rocks | by | Whitman Cross | with a | geological sketch of Buffalo peaks Colorado | by | S. F. Emmons | geologist in charge of Rocky mountain division | [Survey design] |

Washington | government printing office | 1883

Paper cover bearing title as above; advertisement of the publications of the survey, pp. 1-2; general title as above, verso blank; special title as above, verso blank; letter of transmittal by Mr. Emmons to the director, p. "7-8," verso blank; contents and illustrations, p. "9-10," verso blank; "Errors in bulletin 1, United States geological survey," verso blank, 1 l.; introductory sketch by Emmons, pp. 11-17, verso blank; text by Cross, pp. 19-38; index, pp. 39-42; "notice" (as to numbering and binding) on outside of back cover; 8°. Plates I and II. A second (volume) pagination, in parentheses, is carried through the text at the foot of the pages. In this (the first) bulletin it runs uniform with the regular pagination; and it is explained by the following extract from the advertisement:

"The Bulletins will each contain but one paper, and be complete in itself. They will, however, be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this each Bulletin will have two paginations, one proper to itself at the top, and at the bottom, one which belongs to it in the volume."

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3,200 copies published—3,000 required by the law relating to these bulletins, and 200 extras ordered by the authors. The selling price of this bulletin is 10 cents.

Documentary edition of bulletin 1 as follows:

47th congress, | 2d session. | House of representatives. | Mis. doc. |  
no. 16. | Department of the interior | Bulletin | of the | United States |  
geological survey | no. 1 | On hypersthene-andesite and on triclinic  
pyroxene in augitic | rocks, by Whitman Cross; with a geological  
sketch of | Buffalo peaks, Colorado, by S. F. Emmons, geologist- | in-  
charge of Rocky mountain division |

Washington | government printing office | 1883

Outside title as above, on white paper; advertisement, general title, special title, and remainder of collation as in the other edition.

1,900 copies, the "usual number" edition; published by authority of a joint resolution approved July 7, 1882. Of these, about 800 were delivered unbound, as described above; the remainder were printed later and bound in sheep as a part of vol. 1 of the "Miscellaneous documents of the house of representatives for the second session of the forty-seventh congress."

This bulletin appears again in the documentary edition of vol. 1, description of which will be found *infra* between the descriptions of bulletins 6 and 7.

## BULLETIN 2.

*Cover title:* Department of the interior | Bulletin | of the | United  
States | geological survey | no. 2 | Gold and silver conversion tables,  
giving the coining values | of troy ounces of fine metal, and the weights  
of | fine metal represented by given sums | of United States money |

Washington | government printing office | 1883

*General title:* Department of the interior | Bulletin | of the | United  
States | geological survey | no. 2 | [Seal of the department of the in-  
terior] |

Washington | government printing office | 1883

*Special title:* United States geological survey | J. W. Powell  
director | Gold and silver | conversion tables | giving the | coining  
values of troy ounces of fine metal, and the | weights of fine metal  
represented by given | sums of United States money | computed by |  
Albert Williams, jr., | chief of division of mining statistics and tech-  
nology | [Survey design] |

Washington | government printing office | 1883

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagged leaf; general title as above, verso blank; special title as above, verso blank; the tables, pp. 5-8 (47-50 of the volume); notice as to numbering and binding, outside of back cover. 8°.

3,000 copies published, being the number required by the law relating to these bulletins. The selling price of this bulletin is 5 cents.



There is no documentary edition of this bulletin and subsequent ones separately. Bulletin 1 does appear separately in documentary form, but thereafter, seeing that several bulletins would appear within a year and that they were prepared for combination into volumes, it was concluded to issue a documentary edition of the volumes instead of one of each brochure. For description of the documentary edition of vol I, see *infra* between descriptions of bulletins 6 and 7.

BULLETIN 3.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 3 | On the fossil faunas of the upper Devonian along the | meridian of 76° 30' from Tompkins county N. Y. | to Bradford county Pa. |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 3 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | On | the fossil faunas | of the | upper Devonian | along the meridian of 76° 30' from Tompkins county, N. Y., | to Bradford county, Pa. | by | Henry S. Williams | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; text, pp. [5]-31 (55-81 of the volume) verso blank; index, pp. 33-36; notice as to numbering and binding, outside of back cover. 8°.

3,000 copies published, being the number required by the law relating to these bulletins. The price of this bulletin is 5 cents.

BULLETIN 4.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 4 | On Mesozoic fossils |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no [sic] 4. | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | On | Mesozoic fossils | by | Charles A. White, m. d. | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; contents and illustrations, verso blank, 1 leaf; text, pp. [5]-17 (93-105 of the volume), verso blank; index, p. [19]; explanation of plate I, p. 20 (followed by the plate); explanation of plate II, p. 22, recto blank (followed by the plate); etc. even pages to 36, rectos blank, each followed by a plate; notice as to numbering and binding, outside of back cover. 8°. Plates I-IX.

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3,000 copies published, being the number required by the law relating to these bulletins. Price, 5 cents.	

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*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 5 | A dictionary of altitudes in the United States |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 5 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | A | dictionary of altitudes | in | the United States | compiled by | Henry Gannett | chief geographer | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagéd leaf; general title as above, verso blank; special title as above, verso blank; letter of transmittal, verso blank, 1 leaf; contents, pp. [7]–8; discussion of authorities, pp. [9]–16; abbreviations of names of railroads given as authorities, pp. [17]–24; the dictionary of altitudes, pp. [25]–325 (149–449 of the volume); notice as to numbering and binding, outside of back cover 8°.

Arranged alphabetically by states, and within each state by railroad stations.

3,500 copies—the 3,000 required by the law relating to these bulletins, and 500 additional ordered by the department. Price, 20 cents. See bulletin no. 76.

## BULLETIN 6.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 6 | Elevations in the dominion of Canada |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 6 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | Elevations | in the | dominion of Canada | by | J. W. Spencer | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagéd leaf; general title as above, verso blank; special title as above, verso blank; letter of transmittal, verso blank, 1 leaf; preface, verso blank, 1 leaf; table of contents, verso blank, 1 leaf; the tables of elevations, pp. [11]–43 (461–493

of the volume), verso blank; title for vol. I (see below), verso blank; contents for vol. I, p. iii, verso blank; illustrations for vol. I, p. v, verso blank; notice as to numbering and binding, outside of back cover. 8°.

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3,000 copies, the number required by the law relating to these bulletins. Price, 5 cents.

Bulletins 1-6 form vol. I, as follows:

Department of the interior | Bulletins | of the | United States |  
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Washington | government printing office | 1884

Title as above, verso blank; contents of the volume, p. iii, verso blank; illustrations of the volume, p. v, verso blank; the six bulletins, pp. 1-493. 8°. 11 plates.

Documentary edition of vol. I, as follows:

48th congress, | 1st session. | House of representatives. | Mis. doc.  
| no. 71. | Department of the interior | Bulletins | of the | United  
States | geological survey | Vol. I |

Washington | government printing office | 1884

Title as above on white paper; then follow title, contents, illustrations, and remainder of volume as in the other edition.

1,900 copies published, the "usual number" edition. A portion of the edition (about 800) were delivered unbound, as described above; the remainder were printed later and bound in sheep, in which form they constitute the greater part of vol. 36 of the "Miscellaneous documents of the house of representatives for the first session of the forty-eighth congress."

BULLETIN 7.

Cover title: Department of the interior | Bulletin | of the | United  
States | geological survey | no. 7 | A catalogue of geological maps  
relative to | North and South America |

Washington | government printing office | 1884

General title: Department of the interior | Bulletin | of the | United  
States | geological survey | no. 7 | [Seal of the department of the  
interior] |

Washington | government printing office | 1884



*Special title:* United States geological survey | J. W. Powell director | Mapoteca geologica americana | A catalogue | of | geological maps | of | America (North and South) | 1752-1881 | in geographic and chronologic order | by | Jules Marcou and John Belknap Marcou | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; contents, p. v, verso blank; contractions used in references, pp. [7]-8; introduction (signed Jules Marcou, Cambridge, Mass., September, 1882), pp. 9-17, verso blank; the catalogue, pp. 19-171, a supplement beginning on p. 159; index of authors and places, pp. 173-184; notice as to numbering and binding, outside of back cover. 8°. A volume pagination, in parentheses, appears at the foot of the pages.

The catalogue is arranged geographically, from Arctic America to Tierra del Fuego, and chronologically under each division.

3,000 copies published, being the number required by the law relating to these bulletins. Price 10 cents.

### BULLETIN 8.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 8 | On secondary enlargements of mineral fragments | in certain rocks. |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 8 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | On | secondary enlargements | of | mineral fragments | in | certain rocks | by | R. D. Irving and C. R. Van Hise | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; letter of transmittal by Irving to the director, p. 5, verso blank; contents, p. 7, verso blank; illustrations, pp. 9-10; text, pp. 11-52 (195-236 of the volume); index, pp. 53-56; notice as to numbering and binding, outside of back cover. 8°. Plates I-VI; figs. 1-4.

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3,000 copies published, the number required by the law relating to these bulletins.  
Price 10 cents.

### BULLETIN 9.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 9 | A report of work done in the Washington laboratory | during the fiscal year 1883-'84 |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 9 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | A report of work done | in the | Washington laboratory | during the | fiscal year 1883-'84 | F. W. Clark chief chemist | T. M. Chatard assistant chemist | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; contents, p. 5, verso blank; introductory, by Clarke, p. 7, verso blank; text, pp. 9-37 (249-277 of the volume), verso blank; index, pp. 39-40; notice as to numbering and binding, outside of back cover. 8°.

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3,150 copies published—3,000 required by the law relating to these bulletins, and 150 extras ordered by the author. Price, 5 cents.

#### BULLETIN 10.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 10 | On the Cambrian faunas of North America |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 10 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | On | the Cambrian faunas | of | North America | preliminary studies | by | Charles Doolittle Walcott | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above,



verso blank; letter of transmittal, p. 5, verso blank; contents and illustrations, p. 7, verso blank; text, pp. 9-51 (289-331 of the volume), verso blank; index, pp. 53-55; explanation of plate 1, p. 56 (plate 1 facing); explanations of the remaining plates, pp. 58, 60, 62, 64, 66, 68, 70, 72, and 74 (rectos blank, plates facing explanations); notice as to numbering and binding, outside of back cover. 8°. Plates I-X (IX being folded.)

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3,100 copies published—3,000 required by the law relating to these bulletins, and 100 extras ordered by the author. Price, 5 cents.

#### BULLETIN 11.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 11 | On the Quaternary and recent Mollusca of the | Great basin, with descriptions of new forms |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 11 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | On the | Quaternary and recent Mollusca of the | Great basin | with descriptions of new forms | by | R. Ellsworth Call | Introduced by a | sketch of the Quaternary lakes of the Great basin | by | G. K. Gilbert | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; contents, p. 5, verso blank; illustrations, p. 7, verso blank; introductory sketch by Gilbert, pp. 9-12; text by Call, pp. 13-49 (367-403 of the volume), verso blank; index, pp. 51-56; plate explanations, pp. 58, 60, 62, 64, and 66 (rectos blank, plates facing the explanations); notice as to numbering and binding, outside of back cover. 8°. Plates I-VI.

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3,200 copies published—3,000 required by the law relating to these bulletins, and 200 extras ordered by the author. Price, 5 cents.

#### BULLETIN 12.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 12 | A crystallographic study of the thinolite of lake Lahontan. |

Washington | government printing office | 1884

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 12 | [Seal of the department of the interior] |

Washington | government printing office | 1884

*Special title:* United States geological survey | J. W. Powell director | A | crystallographic study | of the | thinolite of lake Lahontan | by | Edward S. Dana | [Survey design] |

Washington | government printing office | 1884

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; letter of transmittal by G. K. Gilbert, geologist in charge of the division, to the director, p. 5, verso blank; contents and illustrations, p. 7, verso blank; text, pp. 9-28 (429-448 of the volume); index, p. "29-30," verso blank; explanations of plates, pp. 32 and 34 (rectos blank, plates facing the explanations); notice as to numbering and binding, outside of back cover. 8°. Plates I-III; fig. 1.

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3,100 copies published—3,000 required by the law relating to these bulletins, and 100 extras ordered by the author. Price, 5 cents.

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*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 13 | Boundaries of the United States

and of the several | states and territories, with a historical | sketch of the territorial changes |

Washington | government printing office | 1885

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 13 | [Seal of the department of the interior] |

Washington | government printing office | 1885

*Special title:* United States geological survey | J. W. Powell director | Boundaries | of | the United States | and of the | several states and territories | with a | historical sketch of the territorial changes | by | Henry Gannett | chief geographer | [Survey design] |

Washington | government printing office | 1885

Paper cover bearing title as above; advertisement of the publications of the survey, 1 unpagcd leaf; general title as above, verso blank; special title as above, verso blank; letter of transmittal, p. 5, verso blank; contents, pp. 7-8; text, pp. 9-129 (465-585 of the volume), verso blank; index, pp. 131-135; notice as to numbering and binding, outside of back cover. 8°.

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# BULLETIN 14.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 14 | On the physical characteristics of the iron-carburets | more particularly on the galvanic thermo-electric | and magnetic properties of wrought iron steel | and cast iron in different states of hardness | together with a physical diagram for | the classification of iron-carburets |

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Washington | government printing office | 1885

*Special title:* United States geological survey | J. W. Powell di-



rector | The | electrical and magnetic properties | of the | iron-carbu-  
rets | by | Carl Barus and Vincent Strouhal | [Survey design] |  
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## BULLETIN 15.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 15 | Notes on the Mesozoic and Cenozoic paleontology | of California |

Washington | government printing office | 1885

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# BULLETIN 21.

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## BULLETIN 23.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 23 | Observations on the junction between the Eastern | sandstone and the Keweenaw series on | Keweenaw point, | lake Superior |

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#### BULLETIN 24.

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*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 36 | Subsidence of fine solid particles in liquids |

Washington | government printing office | 1886

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 36 | [Seal of the department of the interior] |

Washington | government printing office | 1886

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Washington | government printing office | 1887

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Cover title: Department of the interior | Bulletin | of the | United States | geological survey | no. 37 | Types of the Laramie flora |

Washington | government printing office | 1887

General title: Department of the interior | Bulletin | of the | United States | geological survey | no. 37 | [Seal of the department of the interior] |

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Washington | government printing office | 1887

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Washington | government printing office | 1887

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Washington | government printing office | 1887

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#### BULLETIN 61.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 61 | Contributions to the mineralogy of the | Pacific coast |

Washington | government printing office | 1890

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 61 | [Seal of the department of the interior] |

Washington | government printing office | 1890

*Special title:* United States geological survey | J. W. Powell, director

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With vol. VIII (ending with bulletin 54) the volume feature was discontinued by the survey, but of the subsequent bulletins the documentary edition required by law was gotten out by throwing together bodily as many as might be convenient. Bulletins 55-61 form a volume with the following title:

51st congress, | 1st session. | House of representatives. | Mis. doc. |  
no. 244. | Bulletins | of the | United States | geological survey | nos. 55  
to 61 |

Washington | government printing office | 1890

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#### BULLETIN 62.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 62 | The greenstone schist areas of the Menominee and | Marquette regions of Michigan |

Washington | government printing office | 1890

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 62 | [Seal of the department of the interior] |

Washington | government printing office | 1890

*Special title:* United States geological survey | J. W. Powell, director | The greenstone schist areas | of the | Menominee and Marquette regions of Michigan | a contribution to the subject of dynamic metamorphism | in eruptive rocks | by | George Huntington Williams | with an introduction by | Roland Duer Irving | [Survey design] | Washington | government printing office | 1890

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## BULLETIN 63.

*Cover title* : Department of the interior | Bulletin | of the | United States | geological survey | no. 63 | A bibliography of Paleozoic Crustacea | from 1698 to 1889 |

Washington | government printing office | 1890

*General title* : Department of the interior | Bulletin | of the | United States | geological survey | no. 63 | [Seal of the department of the interior] |

Washington | government printing office | 1890

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## BULLETIN 64.

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*Special title* : United States geological survey | J. W. Powell, director | A report of work done | in the | division of chemistry and physics

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#### BULLETIN 65.

*Cover title:* Department of the interior | Bulletin | of the | United  
States | geological survey | no. 65 | Stratigraphy of the bituminous coal  
field in | Pennsylvania, Ohio, and West Virginia |

Washington | government printing office | 1891

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51st congress, | 2d session. | House of representatives. | Mis. doc. | no. 136. | Department of the interior | Bulletins | of the | United States | geological survey | nos. 62 to 65 |

Washington | government printing office | 1891

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# BULLETIN 66.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 66 | On a group of volcanic rocks from the Tewan | mountains, New Mexico, and on the | occurrence of primary quartz | in certain basalts. |

Washington | government printing office | 1890

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 66. | [Seal of the department of the interior] |

Washington | government printing office | 1890

*Special title:* United States geological survey | J. W. Powell, director | On | a group of volcanic rocks | from the | Tewan mountains, New Mexico, | and on | the occurrence of primary quartz in certain basalts | by | Joseph Paxson Iddings | [Survey design] |

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### BULLETIN 67.

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Washington | government printing office | 1890

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Washington | government printing office | 1890

*Special title:* United States geological survey | J. W. Powell, director | The relations | of the | traps of the Newark system | in the | New Jersey region | by | Nelson Horatio Darton | [Survey design] |

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Washington | government printing office | 1890

*Special title:* United States geological survey | J. W. Powell, director | Earthquakes in California | in | 1889 | by | James Edward Keeler | astronomer in charge of earthquake observations, Lick | observatory | [Survey design] |

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## BULLETIN 69.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 69 | A classed and annotated bibliography | of fossil insects |

Washington | government printing office | 1890

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## BULLETIN 70.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 70 | Report on astronomical work of 1889 and 1890 |

Washington | government printing office | 1890

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 70 | [Seal of the department of the interior] |

Washington | government printing office | 1890

*Special title:* United States geological survey | J. W. Powell, director | Report | on | astronomical work | of | 1889 and 1880 | by | Robert Simpson Woodward | [Survey design] |

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52d congress, | 1st session. | House of representatives. | Mis. doc. | no. 21. | Department of the interior | Bulletins | of the | United States | geological survey | nos. 66 to 70 |

Washington | government printing office | 1892

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### BULLETIN 71.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 71 | Index to the known fossil insects of the world, | including myriapods and arachnids |

Washington | government printing office | 1891

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 71 | [Seal of the department of the interior] |

Washington | government printing office | 1891

*Special title:* United States geological survey | J. W. Powell, director | Index | to the known | fossil insects of the world | including | myriapods and arachnids | by | Samuel Hubbard Scudder | [Survey design] |

Washington | government printing office | 1891

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52d congress, | 1st session. | House of representatives. | Mis. doc. |  
no.22. | Department of the interior | Bulletins | of the | United States |  
geological survey | no. 71 |

Washington | government printing office | 1892

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## BULLETIN 72.

*Cover title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 72 | Altitudes between lake Superior and the | Rocky mountains |

Washington | government printing office | 1891

*General title:* Department of the interior | Bulletin | of the | United States | geological survey | no. 72 | [Seal of the department of the interior] |

Washington | government printing office | 1891

*Special title:* United States geological survey | J. W. Powell, director | Altitudes | between | lake Superior and the Rocky mountains | by | Warren Upham | [Survey design] |

Washington | government printing office | 1891

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## BULLETIN 74.

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## BULLETIN 76.

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## BULLETIN 80.

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6,000 copies published—3,000 under the law relating to survey publications and 3,000 by order of the secretary of the interior. Sold by the director of the survey at 50 cents a copy.

Documentary edition as follows:

48th congress, | 1st session. | House of representatives. | Mis. doc. | no. 75. | Department of the interior | United States geological survey | J. W. Powell director | Mineral resources | of the | United States | [calendar year 1882] Albert Williams, jr. | chief of division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1883

Title as above, verso blank; contents, letter of transmittal, acknowledgments, and remainder of collation, and the contents, same as in the other edition.

1,900 copies published, the "usual number" edition, about 800 of which were delivered unbound, as described above; the remainder (about 1,100) were printed later and bound in sheep, in which form they constitute vol. 40 of the "Miscellaneous documents of the house of representatives for the first session of the forty-eighth congress." In these sheep-bound copies the leaf of advertisement is found preceding the title.

Of the "Summary" and the article on "American gems and precious stones" in this volume I have seen separates, as follows:

#### SEPARATES FROM MINERAL RESOURCES 1882.

[A summary of the] Mineral products of the United | States.

No title; heading as above; pp. [1]-7. 8°.

Following the heading is this note, within brackets:

Abstract from a report entitled "The mineral resources of the United States," by Albert Williams, jr., chief of division of mining statistics and technology, United States geological survey, for the calendar year 1882 and the first six months of 1883.

*Cover title:* Department of the interior | American gems | and | precious stones | by | George F. Kunz | [Seal of the department of the interior] |

Washington | government printing office | 1883

*Last title:* United States geological survey | J. W. Powell director | American gems | and | precious stones | by | George F. Kunz | Extract from "The mineral resources of the United States" by Albert Williams jr. | chief of the division of mining statistics and technology 1883 | [Survey design] |

Washington | government printing office | 1883

Paper cover bearing title as given above; the same title repeated, verso blank; last title as given above, verso beginning of text; text, pp. 482-499. 8°. 500 copies issued by the department for gratuitous distribution.

#### MINERAL RESOURCES 1883-1884.

[Survey design] | Department of the interior | United States geological survey | J. W. Powell, director | Mineral products of the United States | calendar years 1882, 1883, and 1884.

*Colophon:* Washington, D. C., | June 9, 1885. | Albert Williams, jr.,  
| chief of division of mining statistics.

One sheet, folio. A tabulation of the quantities and values of the various mineral products of the country for the years named. 2,000 copies issued by the department.

Department of the interior | United States geological survey | J. W.  
Powell director | Mineral resources | of the | United States | calendar  
years | 1883 and 1884 | Albert Williams jr. | chief of division of mining  
statistics and technology | [Survey design] |

Washington | government printing office | 1885

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49th congress, | 1st session. | House of representatives. | Mis. doc. | no. 36. | Department of the interior | United States geological survey | J. W. Powell, director | Mineral resources | of the | United States | calendar years | 1883 and 1884 | Albert Williams, jr. | chief of division of mining statistics and technology | [Survey design] |

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Title as above, verso blank; advertisement of the publications of the survey, 2 unpagcd leaves, verso of last one blank; contents, illustrations, letter of transmittal, and remainder of collation, and the contents, same as the other edition.

1,900 copies published, the "usual number" edition, about 800 of which were issued unbound, as described above; the remainder were printed later and bound in sheep, in which form they constitute vol. 9 of the "Miscellaneous documents of the house of representatives for the first session of the forty-ninth congress."

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Washington | government printing office | 1885

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#### MINERAL RESOURCES 1885.

[Survey design] | Department of the interior | United States geological survey | J. W. Powell, director | Mineral products of the United States | calendar years 1882, 1883, 1884, and 1885.

*Colophon:* Division of mining statistics, | Washington, D. C., August 27, 1886.

One sheet, folio. A tabulation of the quantities and values of the various mineral products of the country for the years named. 2,500 copies issued by the department.

Department of the interior | United States geological survey | J. W. Powell, director | Mineral resources | of the | United States | calendar year 1885 | [Albert Williams, jr., and David Talbot Day, chiefs of division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1886



Advertisement of the publications of the survey, 2 unpagéd leaves, verso of last one "notice"; title as above, verso blank; contents, pp. iii-iv; letter of transmittal to the director, by David T. Day, geologist in charge, p. v; introductory, pp. vi-vii, verso blank; summary, pp. 1-9; text, pp. 10-557, verso blank; index, pp. 559-576. 8°. "Fig. 2" occupies p. 205, "Fig. 6" p. 287, and a "map" p. 308; these are the only illustrations in the volume.

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*Colophon:* Washington, D. C., December 15, 1887. | David T. Day, | chief of division of mining statistics.

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Washington | government printing office | 1887

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Department of the interior | United States geological survey | J. W. Powell, director | Mining law | by | Elgin R. L. Gould | Abstract from "Mineral resources of the United States, | calendar year 1886"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

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#### MINERAL RESOURCES 1887.

[Survey design] | Department of the interior | United States geological survey | J. W. Powell, director | Mineral products of the United States | calendar years 1882 to 1887. .

*Colophon:* Washington, D. C., October 15, 1888. | David T. Day, | chief of division of mining statistics.

One sheet, folio. A tabulation of the quantities and values of the various mineral products of the country for the years named. 4,000 copies issued by the department.

Department of the interior | United States geological survey | J. W. Powell, director | Mineral resources | of the | United States | calendar



year | 1887 | David T. Day | chief of division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1888

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Mineral waters, by A. C. Peale.....	680-687
Useful minerals of the United States, edited by Albert Williams, jr.....	688-812

6,000 copies published—3,000 under the law relating to survey publications and 3,000 additional copies ordered by the secretary of the interior. Sold by the director of the survey at 50 cents a copy, actual cost of publication as estimated by the public printer.

Documentary edition as follows:

50th congress, | 2d session. | House of representatives. | Mis. doc. | no. 4. | Department of the interior | United States geological survey | J. W. Powell, director | Mineral resources | of the | United States | calendar year | 1887 | David T. Day | chief of division of mining statistics and technology | [Survey design] |

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Of some of the more important papers composing this volume brief abstracts, usually "subject to revision," were issued in advance of the volume; and of most of the papers 100 copies were issued separately, for gratuitous distribution, as follows:

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#### MINERAL RESOURCES 1888.

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Washington | government printing office | 1890

Sample library catalogue slips, verso blank, 11.; advertisement of the publications of the survey, pp. i-iv; notice concerning this series of publications, recto blank, 11.; title as above, verso blank; contents, p. iii, verso blank; letter of transmittal, p. [v], verso blank; introduction, p. vii, verso blank; summary, pp. 1-11; text, pp. 12-630; index, pp. 631-652. 8°. "Fig. 2" occupies p. 101; it is the only illustration in the volume.

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Documentary edition as follows:

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Washington | government printing office | 1890

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1,734 copies published, being the "usual number" edition. Of these about 600 were issued unbound, as described above; the remainder were printed later and bound in sheep as vol. 16 of the "Miscellaneous documents of the house of representatives for the first session of the fifty-first congress."

Of some of the more important papers composing this volume brief abstracts were issued, usually "subject to revision," in advance of the volume; and of most of the papers separate copies were issued for gratuitous distribution, as follows:



## SEPARATES FROM MINERAL RESOURCES 1888.

Department of the interior | United States geological survey | J. W. Powell, director | Summary | of the | mineral products | of the | United States | Abstract from "Mineral resources of the United States | calendar year 1888"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1890

Paper cover bearing title as above; inner title same, verso blank; text, pp. 1-11. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | The | iron and steel industries of the United States | for | 1888 and 1889 | by | James M. Swank | general manager American iron and steel association | Abstract from "Mineral resources of the United States | calendar year 1888"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

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Department of the interior | United States geological survey | J. W. Powell, director | Copper | by | C. Kirchhoff, jr. | Abstract from "Mineral resources of the United States | calendar year 1888"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1890

Paper cover bearing title as above; inner title same, verso blank; text, pp. 43-77. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Lead | by | C. Kirchhoff, jr. | Abstract from "Mineral resources of the United States | calendar year 1888"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

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Washington | government printing office | 1890

Paper cover bearing title as above; inner title same, verso blank; text, pp. 623-630. 8°. 100 copies.

#### MINERAL RESOURCES 1889-1890.

[Survey design] | Department of the interior | United States geological survey | J. W. Powell, director | Mineral products of the United States. | Calendar years 1880 to 1890. |

*Colophon:* Washington, D. C., December 28, 1891.

One sheet, 32½ by 34½ inches.\* A tabulation of the quantities and values of the various mineral products of the country for the years named. 4,000 copies published by the department.

Department of the interior | United States geological survey | J. W. Powell, director | Mineral resources | of the | United States | calendar years | 1889 and 1890 | David T. Day | chief of division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1892

Sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso "notice" concerning this series of publications; title as above, verso blank; contents, pp. iii-iv; letter of transmittal, p. v, verso blank; introduction, pp. vii-viii; summary, pp. 1-9; text, pp. 10-535, verso blank; general index to Mineral resources of the United States from 1882 to 1890, pp. 537-651, verso blank; index to the volume, pp. 653-671. 8°. One unnumbered fig. occupying p. 53; entitled "World's production of gold and silver," and one unnumbered plate facing p. 94, entitled "Production and price of quicksilver in the United States."

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Documentary edition as follows:

52d congress, | 1st session. | House of representatives. | Mis. doc. | no.296. | Department of the interior | United States geological survey | J. W. Powell, director | Mineral resources | of the | United States | calendar years | 1889 and 1890 | David T. Day | chief of division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1892

No cover; sample library catalogue slips, verso blank, 1 l.; advertisement of the publications of the survey, pp. i-v, verso "notice" concerning this series of publi-

cations; title as above, verso blank; contents and remainder of volume as described above for the other edition.

1,734 copies published, the "usual number" edition, about 600 of which were delivered unbound; the remainder were printed later and bound in sheep, in which form they constitute vol. 42 of the "Miscellaneous documents of the house of representatives for the first session of the fifty-second congress."

Of each of the papers composing this volume, except those on Soapstone and Lithographic stone and the Index from 1882 to 1890, separates were issued, for gratuitous distribution, as follows:

#### SEPARATES FROM MINERAL RESOURCES 1889-1890.

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Department of the interior | United States geological survey | J. W. Powell, director | Mineral waters | by | A. C. Peale | Abstract from "Mineral resources of the United States | calendar years 1889 and 1890"—David T. Day, chief of | the division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1892

Paper cover bearing title as above; inner title same, verso blank; text, pp. 521-535. 8°. 400 copies.

#### MINERAL RESOURCES 1891.

[Survey design] Department of the interior | United States geological survey | J. W. Powell, director. | Mineral products of the United States. | Calendar years 1880 to 1891.

Colophon: Washington, D. C., October 1, 1892. | David T. Day, | chief of division of mining statistics.



One sheet, 28 by 34 inches. A tabulation of the quantities and values of the various mineral products of the country for the years named. 4,000 copies issued by the department.

Department of the interior | United States geological survey | J.W. Powell, director | Mineral resources | of the | United States | calendar year | 1891 | David T. Day | chief of division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

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At this writing the documentary edition of M. R. 1891 has not been issued.

Of the papers composing this volume separates were issued as follows:

#### SEPARATES FROM MINERAL RESOURCES 1891.

Department of the interior | United States geological survey | J. W. Powell, director | The | production of iron ores | in | 1891 | by | John Birkinbine | Extract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp 10-46. 8°. 2 plates. 100 copies.

The foregoing is the regular separate, delivered in May, 1893; but there was an issue of 700 copies in advance of the volume; in these the title is identical with that given above except that the date is 1892 instead of 1893, and the collation is the same except that the text is repaged 3-37 and the running heading on both even and odd pages is made to read "Production of iron ores in 1891."

Department of the interior | United States geological survey | J. W. Powell, director | Twenty years of progress | in the | manufacture of iron and steel | in the | United States | by | James M. Swank | general manager American iron and steel association | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp 47-73. 8°. 100 copies.

The foregoing is the regular separate from the volume, but the same matter was printed and issued earlier, as follows:

Department of the interior, | United States geological survey. | J. W. Powell, director. | Twenty years of progress | in | the manufacture of iron and steel | in the United States. | By | James M. Swank, | general manager of the American iron and steel association. | Extract from Mineral resources of the United States | for calendar year 1891.—David T. Day, chief of the | division of mining statistics and technology. | [Survey design.] |

Washington: | 1892.

Paper cover bearing title as above, verso contents; no inner title; text, pp. 1-32. 8°. 600 copies. At the foot of p. 31 is the following line: "No. 261 South Fourth

Street, Philadelphia, December 1, 1892." This brochure was printed in Philadelphia in advance of the volume, the former being used as copy for the corresponding portion of the latter, though there are a few minor differences between the two texts, probably made in proof. Moreover, the last page of this earlier brochure is occupied by a "Comparative exhibit of the foregoing statistical statements," partly in graphic form, which does not appear at all in the volume or the regular separate.

Twenty years of iron-ore development, pp. 1-7.

Twenty years of pig-iron production, pp. 7-13.

Twenty years of progress in the manufacture of steel, pp. 13-16.

Twenty years of rolling-mill development, pp. 17-19.

Twenty years of changes in the manufacture of iron and steel rails, pp. 19-22.

Twenty years of progress in the manufacture of nails, pp. 23-24.

Twenty years of progress in iron and steel bridge-building, pp. 24-25.

Twenty years of iron and steel shipbuilding, pp. 25-27.

Efforts to establish the tin-plate industry, pp. 27-29.

A branch of the iron industry which has declined, p. 29.

Twenty years of prices of iron and steel, p. 30.

The United States now the first of all iron and steel manufacturing countries, pp. 30-31.

Comparative exhibit of the foregoing statistical statements, p. 32.

Department of the interior | United States geological survey | J. W. Powell, director | Gold and silver | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 74-80. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Copper | by | C. Kirchhoff | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 81-102. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Lead | by | C. Kirchhoff | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 103-110. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Zinc | by | C. Kirchhoff | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 111-116. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Quicksilver | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 117-125 (p. 118 being occupied by an unnumbered plate). 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Manganese | by | Joseph D. Weeks | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 126-146. 8°. 200 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Aluminum | by | R. L. Packard | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 147-63. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Tin | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 164-166. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Nickel and cobalt | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 167-170. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Chrome iron ore | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 171-173. 8°. 100 copies.



Department of the interior | United States geological survey | J. W. Powell, director | Antimony | by | E. W. Parker | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 174-176. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Coal | by | E. W. Parker | Extract [*sic*] from "Mineral resources of the United States," [*sic*] | calendar year 1891—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1892

Paper cover bearing title as above, inner title the same, verso blank; text, pp. 3-182. 8°. 2,600 copies; issued in advance of the volume. The text is identical with the corresponding text in the volume; only the pagination and running headings changed.

Department of the interior | United States geological survey | J. W. Powell, director. | The | manufacture of coke | by | Joseph D. Weeks | Extract [*sic*] from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1892

Paper cover bearing title as above; inner title the same, verso blank; text, pp. 3-48. 8°. 600 copies; issued in advance of the volume. The text is identical with the corresponding text in the volume; only the pagination and running headings changed.

Department of the interior | United States geological survey | J. W. Powell, director | Petroleum | by | Joseph D. Weeks | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 403-435. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Natural gas | by | Joseph D. Weeks | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 436-451. 8°. 800 copies.



Department of the interior | United States geological survey | J. W. Powell, director | Asphaltum | by | E. W. Parker | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 452-455. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Stone | by | William C. Day | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 456-473. 8°. 1,500 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Clay materials of the United States | by | Robert T. Hill | Abstract from "Mineral resources of the United States | calendar year 1891"—Division of mining | statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 474-528. 8°. 300 copies. The words "David T. Day, chief of the," usually found in the titles of these separates, are lacking in this instance.

Department of the interior | United States geological survey | J. W. Powell, director | Natural and artificial cements | by | Spencer B. Newberry [*sic*] | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 529-538. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Precious stones | by | George F. Kunz | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 539-551. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Abrasive materials | by | E. W. Parker | Abstract

from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 552-556. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Fertilizers | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 557-563. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Sulphur | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 564-571. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Salt and bromine | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 572-579. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Gypsum | by | E. W. Parker | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 580-583. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Magnesite | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 584-585. 8°. 100 copies.

Department of the interior | United States geological survey | Fluor-spar and borax | Abstract from "Mineral resources of the United

'States | calendar year 1891"—Division of mining | statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso beginning of text; text, pp. 586-588. 8°. 100 copies. The words "David T. Day, chief of the," usually found in the titles of these separates, are lacking in this instance.

Department of the interior | United States geological survey | J. W. Powell, director | Graphite, asbestos, and soapstone | by | E. W. Parker | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 589-594. 8°. 200 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Mineral paints and barytes | by | E. W. Parker | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 595-600. 8°. 100 copies.

Department of the interior | United States geological survey | J. W. Powell, director | Mineral waters | by | A. C. Peale | Abstract from "Mineral resources of the United States | calendar year 1891"—David T. Day, chief of the | division of mining statistics and technology | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; text, pp. 601-610. 8°. 100 copies.





# GEOLOGIC ATLAS OF THE UNITED STATES AND AUXILIARY AND SUBSIDIARY MAPS.

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## GEOLOGIC FOLIOS.

Department of the interior | United States geological survey | J. W. Powell, director | Geologic atlas | of the | United States | Chattanooga sheet | Tennessee [-Ringgold sheet | Tennessee-Georgia] | Index map | [the index map, showing geographic position of area covered by the sheet] | Scale: 50 miles=1 inch | List of sheets | explanatory Appalachian descriptive topography areal geology structure sections | economic geology columnar sections |

Executed by the engraving division, U. S. geological survey | Washington, D. C. | 1892 | Chattanooga sheet [-Ringgold sheet]

Title as above on cover, laid loosely inside which are, in each case, the sheets composing the folio.

The following information concerning these atlas folios is taken from the explanatory text which accompanies every folio:

"The Geological Survey is making a large topographic map and a large geologic map of the United States. These large maps are being made in small sections or sheets of convenient and uniform size. Several thousand such sheets are required for the whole of the United States. Taken altogether they will constitute an atlas, and each leaf is called an atlas sheet. . . . ."

"Three different scales are used on the atlas sheets of the U. S. Geological Survey; the smallest is  $\frac{1}{250000}$ , the second  $\frac{1}{125000}$ , and the largest  $\frac{1}{62500}$ . These correspond approximately to four miles, two miles, and one mile of natural length to one inch of map length. . . . ."

"A map of the United States on the smallest scale used by the U. S. Geological Survey would be 60 feet long and 45 feet high. If drawn on one of the larger scales it would be either two times or four times as long and high. To make it possible to use such a map it is divided into parts printed on atlas sheets of convenient size, about 17 by 21 inches, and bounded by parallels and meridians. Each sheet on the scale of  $\frac{1}{250000}$  contains one square degree (that is, represents an area one degree in extent in each direction); each sheet on the scale of  $\frac{1}{125000}$  contains one-quarter of a square degree; each sheet on the scale of  $\frac{1}{62500}$ , one-sixteenth of a square degree. These areas correspond nearly to 4,000, 1,000, and 250 square miles.

"The atlas sheets, being parts of one great map, are laid out without reference to political boundary lines of any kind. They are not state, county, or town maps, but only parts of one map of the United States. For convenience of reference they are given such names as will readily suggest the region shown. . . . ."

"The details belonging to the geologic map are numerous, and in some districts a single sheet does not suffice for their representation without confusion. In such cases special groups of facts are represented on different copies of the same base map. In many of the northern states the Pleistocene formations are varied in character and require representation in detail, yet fail to conceal wholly the underlying formations, so that the latter also can be mapped. In such case a special sheet is devoted to the Pleistocene formations. In regions where the rocks are greatly folded it is specially important that record be made of their inclination or dip. To this end structure sections are delineated on a sheet, which is a partial duplicate of the general geologic map, so as to bring them into close relation to the representation of formation areas, and there is added a special notation to indicate the direction and amount of dip. In certain districts where economic resources are sufficiently important, a special sheet is devoted to the representation of mines and minerals in their relation to the rock formations."

At this writing the following six folios have been finished, but there is yet no edition for distribution, though it is hoped one will soon be ready.

<i>Folio.</i>	<i>Sheets.</i>
Chattanooga, Tenn.....	Explanatory. Appalachian. Descriptive. Topography. Areal geology. Structure sections. Economic geology. Columnar sections.
Hawley, Mass.....	Explanatory. Green Mountain. Descriptive. Topography. Areal geology. Economic geology. Structure sections.
Sacramento, Cal.....	Explanatory. Sketch of Gold Belt. Descriptive text. Topography. Areal geology. Economic geology. Structure sections.
Lassen Peak, Cal.....	Explanatory. Descriptive. Topography. Areal geology. Economic geology. Illustrations of the Cinder Cone.
Kingston, Tenn.....	Explanatory. Appalachian. Descriptive. Topography. Areal geology. Economic geology. Structure sections. Columnar sections.
Ringgold, Tenn.-Ga.....	Explanatory. Appalachian. Descriptive. Topography. Areal geology. Economic geology. Structure sections. Columnar sections.

Special geologic sheets and maps accompany many of the volumes of text; see entries under "Maps, geologic" in the index, pp. 410-416 of this bulletin.

## TOPOGRAPHIC ATLAS SHEETS.

Topography is the basis of geologic representation, and as no suitable topographic map of the country existed, the preparation of such a map claimed the first attention of the survey. The topographic work is therefore well advanced, the following atlas sheets having been finished. The plates are ready for the press, but no edition for general distribution has been printed, and the survey is therefore supplied with only a limited number of proofs.

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° ' "	° ' "			<i>Feet.</i>
Maine .....	Portland.....	43 30	70 15	1/2 degree	1:62500	20
	Newfield.....	43 30	70 45	do	do	20
	Biddeford.....	43 15	70 15	do	do	20
	Kennebunk.....	43 15	70 30	do	do	20
	Gardiner.....	44 00	69 45	do	do	20
	Freeport.....	43 45	70 00	do	do	20
	Augusta.....	44 15	69 45	do	do	20
	Buxton.....	43 30	70 30	do	do	20
	Waterville.....	44 30	69 30	do	do	20
	Small Point.....	43 30	69 45	do	do	20
	Boothbay.....	43 45	69 30	do	do	20
	Bath.....	43 45	69 45	do	do	20
	Wiscasset.....	44 00	69 30	do	do	20
	Vassalboro.....	44 15	69 30	do	do	20
Maine and New Hampshire.	Norridgewock.....	44 30	69 45	do	do	20
	York.....	43 00	70 30	do	do	20
	Dover.....	43 00	70 45	do	do	20
New Hampshire.....	Berwick.....	43 15	70 45	do	do	20
	Mount Washington.....	44 15	71 15	do	do	20
New Hampshire and Vermont.	Brattleboro.....	42 45	72 30	do	do	20
Vermont.....	Wilmington.....	42 45	72 45	do	do	20
	Rutland.....	43 30	72 45	do	do	20
	Wallingford.....	43 15	72 45	do	do	20
	Newburyport.....	42 45	70 45	do	do	20
Massachusetts and New Hampshire.	Haverhill.....	42 45	71 00	do	do	20
	Lawrence.....	42 30	71 00	do	do	20
	Lowell.....	42 30	71 15	do	do	20
	Groton.....	42 30	71 30	do	do	20
	Fitchburg.....	42 30	71 45	do	do	20
	Winchendon.....	42 00	72 00	do	do	20
	Warwick.....	42 30	72 15	do	do	20
Massachusetts, New Hampshire, and Vermont.						
Massachusetts and Vermont.	Greenfield.....	42 30	72 30	do	do	20
	Hawley.....	42 30	72 45	do	do	20
	Greylock.....	42 30	73 00	do	do	40
Massachusetts, Vermont, and New York.	Berlin.....	42 30	73 15	do	do	20
Massachusetts and New York.	Pittsfield.....	42 15	73 15	do	do	20
Massachusetts.....	Gloucester.....	42 30	70 30	do	do	20
	Salem.....	42 30	70 45	do	do	20
	Boston Bay.....	42 15	70 45	do	do	20
	Boston.....	42 15	71 00	do	do	20

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° /	° /			<i>Feet.</i>
Massachusetts.....	Framingham .....	42 15	71 15	$\frac{1}{16}$ degree	1:62500	20
	Marlboro .....	42 15	71 30	do	do	20
	Worcester .....	42 15	71 45	do	do	20
	Barre .....	42 15	72 00	do	do	20
	Belchertown .....	42 15	72 15	do	do	20
	Northampton .....	42 15	72 30	do	do	20
	Chesterfield .....	42 15	72 45	do	do	20
	Becket .....	42 15	73 00	do	do	20
	Provincetown .....	42 00	70 00	do	do	20
	Duxbury .....	42 00	70 30	do	do	20
	Abington .....	42 00	70 45	do	do	20
	Dedham .....	42 00	71 00	do	do	20
	Wellfleet .....	41 45	69 55	do	do	20
	Plymouth .....	41 45	70 30	do	do	20
	Middleboro .....	41 45	70 45	do	do	20
	Taunton .....	41 45	71 00	do	do	20
	Chatham .....	41 30	69 45	do	do	20
	Yarmouth .....	41 30	70 00	do	do	20
	Barnstable .....	41 32	70 15	do	do	20
	Falmouth .....	41 30	70 30	do	do	20
	New Bedford .....	41 30	70 45	do	do	20
	Nantucket .....	41 13	69 57	do	do	20
	Muskeget .....	41 15	70 12	do	do	20
	Marthas Vineyard .....	41 15	70 27	do	do	20
	Gay Head .....	41 15	70 42	do	do	20
Massachusetts and Connecticut.	Webster .....	42 00	71 45	do	do	20
	Brookfield .....	42 00	72 00	do	do	20
	Palmer .....	42 00	72 15	do	do	20
	Springfield .....	42 00	72 30	do	do	20
	Granville .....	42 00	72 45	do	do	20
	Sandisfield .....	42 00	73 00	do	do	20
Massachusetts, Connecticut, and New York.	Sheffield .....	42 00	73 15	do	do	20
Massachusetts and Rhode Island.	Franklin .....	42 00	71 15	do	do	20
	Blackstone .....	42 00	71 30	do	do	20
	Providence .....	41 45	71 15	do	do	20
	Fall River .....	41 30	71 00	do	do	20
Rhode Island .....	Burrilville .....	41 45	71 30	do	do	20
	Narragansett Bay .....	41 30	71 15	do	do	20
	Kent .....	41 30	71 30	do	do	20
	Sakonnet .....	41 15	71 00	do	do	20
Rhode Island .....	Newport .....	41 15	71 15	do	do	20
	Charlestown .....	41 15	71 30	do	do	20
	Block Island .....	41 00	71 30	do	do	20
Rhode Island and Connecticut.	Putnam .....	41 45	71 45	do	do	20
	Moosup .....	41 30	71 45	do	do	20
Rhode Island, Connecticut, and New York.	Stonington .....	41 15	71 45	do	do	20
Connecticut .....	Meriden .....	41 30	72 45	do	do	20
	Waterbury .....	41 30	73 00	do	do	20
	New Milford .....	41 30	73 15	do	do	20
	New Haven .....	41 15	72 45	do	do	20
	Derby .....	41 15	73 00	do	do	20



Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		Q /	O /			<i>Feet.</i>
Connecticut.....	Bridgeport .....	41 00	73 00	$\frac{1}{8}$ degree	1:62500	20
	Norwalk .....	41 00	73 15	do	do	20
	Danbury .....	41 15	73 15	do	do	20
	Winsted .....	41 45	73 00	do	do	20
	New London.....	41 15	72 00	do	do	20
	Tolland .....	41 45	72 15	do	do	20
	Hartford .....	41 45	72 30	do	do	20
	Granby .....	41 45	72 45	do	do	20
	Saybrook .....	41 15	72 15	do	do	20
	Guilford .....	41 15	72 30	do	do	20
	Woodstock .....	41 45	72 00	do	do	20
	Gilead .....	41 30	72 15	do	do	20
	Middletown .....	41 30	72 30	do	do	20
New York and Connect- icut.	Norwich .....	41 30	72 00	do	do	20
	Stamford .....	41 00	73 30	do	do	20
New York.....	Albany .....	42 30	73 45	do	do	20
	West Point.....	41 15	73 45	do	do	20
	Brooklyn .....	40 30	73 45	do	do	20
	Carmel .....	41 15	73 30	do	do	20
	Clove .....	41 30	73 30	do	do	20
	Troy .....	42 30	73 30	do	do	20
New York and New Jer- sey.	Harlem.....	40 45	73 45	do	do	20
	Staten Island.....	40 30	74 00	do	do	20
	Ramapo .....	41 00	74 00	do	do	20
	Greenwood lake .....	41 00	74 15	do	do	20
	Tarrytown .....	41 00	73 45	do	do	20
New Jersey .....	Franklin .....	41 00	74 30	do	do	20
	Paterson .....	41 00	74 00	do	do	20
	Morristown .....	40 45	74 15	do	do	20
	Lake Hopatcong.....	40 45	74 30	do	do	20
	Hackettstown .....	40 45	74 45	do	do	20
	Plainfield .....	40 30	74 15	do	do	20
	Somerville .....	40 30	74 30	do	do	20
	High Bridge .....	40 30	74 45	do	do	20
	Sandy Hook .....	40 15	74 00	do	do	10
	New Brunswick .....	40 15	74 15	do	do	10
	Princeton .....	40 15	74 30	do	do	10
	Asbury Park .....	40 00	74 00	do	do	10
	Cassville .....	40 00	74 15	do	do	10
	Bordentown .....	40 00	74 30	do	do	10
	Barnegat .....	39 45	74 00	do	do	10
	Whitings .....	39 45	74 15	do	do	10
	Pemberton .....	39 45	74 30	do	do	10
	Mount Holly .....	39 45	74 45	do	do	10
	Long Beach .....	39 30	74 00	do	do	10
	Little Egg Harbor.....	39 30	74 15	do	do	10
	Mullicas.....	39 30	74 30	do	do	10
	Hammonton .....	39 30	74 45	do	do	10
	Glassboro.....	39 30	75 00	do	do	10
	Salem .....	39 30	75 15	do	do	10
	Atlantic City.....	39 15	74 15	do	do	10

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		o /	o /			<i>Feet.</i>
New Jersey .....	Great Egg Harbor .....	39 15	74 30	$\frac{1}{16}$ degree	1:62500	10
	Tuckahoe .....	39 15	74 45	do	do	10
	Bridgeton .....	39 15	75 00	do	do	10
	Sea Isle .....	39 00	74 30	do	do	10
	Dennisville .....	39 00	74 45	do	do	10
	Maurice Cove .....	39 00	75 00	do	do	10
	Cape May .....	38 45	74 45	do	do	10
New Jersey and Penn- sylvania.	Wallpack .....	41 00	74 45	do	do	20
	Delaware Water Gap .....	40 45	75 00	do	do	20
	Easton .....	40 30	75 00	do	do	20
	Lambertville .....	40 15	74 45	do	do	20
Pennsylvania .....	Burlington .....	40 00	74 45	do	do	20
	Philadelphia .....	39 45	75 00	do	do	20
	Scranton .....	41 15	75 30	do	do	20
	Hazeltón .....	40 45	75 45	do	do	20
	Catawissa .....	40 45	76 15	do	do	20
	Lykens .....	40 30	76 30	do	do	20
	Doylestown .....	40 15	75 00	do	do	20
	Quakertown .....	40 15	75 15	do	do	20
	Lebanon .....	40 15	76 15	do	do	20
	Germantown .....	40 00	75 00	do	do	20
	Shamokin .....	40 45	76 30	do	do	20
	Pottsville .....	40 30	76 00	do	do	20
	Dundaff .....	41 30	75 30	do	do	20
	Honesdale .....	41 30	75 15	do	do	20
	Harrisburg .....	40 15	76 45	do	do	20
	Hummelstown .....	40 15	76 30	do	do	20
	Pittston .....	41 15	75 45	do	do	20
New Jersey and Delaware Maryland .....	Bayside .....	39 15	75 15	do	do	10
	Baltimore .....	39 15	76 30	do	do	20
	Brandywine .....	38 30	76 45	do	do	20
	Annapolis .....	38 45	76 15	do	do	20
	Wicomico .....	38 15	76 30	do	do	20
	Owensville .....	38 45	76 30	do	do	20
	Relay .....	39 00	76 30	do	do	20
	Ellicott .....	39 15	76 45	do	do	20
	Drum Point .....	38 15	76 15	do	do	20
	Prince Fredericktown .....	38 30	76 30	do	do	20
	Laurel .....	39 00	76 45	do	do	20
	Leonardtown .....	38 15	76 30	do	do	20
	Sharps Island .....	38 30	76 15	do	do	20
	North Point .....	39 00	76 15	do	do	20
Maryland and District of Columbia	Gunpowder .....	39 15	76 15	do	do	20
	East Washington .....	38 45	76 45	do	do	20
Maryland, District of Columbia, and Virginia.	West Washington .....	38 45	77 00	do	do	20
	Mount Vernon .....	38 30	77 00	$\frac{1}{4}$ degree.	1:125000	50
Maryland, Virginia, and West Virginia.	Harpers Ferry .....	39 00	77 30	do	do	100
	Romney .....	39 00	78 30	do	do	100
Maryland and West Vir- ginia.	Piedmont .....	39 00	79 00	do	do	100
Maryland and Virginia..	Frederick .....	39 00	77 00	do	do	50
	Fredericksburg .....	38 00	77 00	do	do	50

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° /	° /			<i>Feet.</i>
Maryland and Virginia.	Point Lookout.....	38 00	76 15	$\frac{1}{16}$ degree	1:62500	20
	Piney Point.....	38 00	76 30	do	do	20
	Montross.....	38 00	76 45	do	do	20
Virginia.....	Warrenton.....	38 30	77 30	$\frac{1}{4}$ degree.	1:125000	50
	Luray.....	38 30	78 00	do	do	100
	Spottsylvania.....	38 00	77 30	do	do	50
	Gordonsville.....	38 00	78 00	do	do	100
	Harrisonburg.....	38 00	78 00	do	do	100
	Gochland.....	37 30	77 30	do	do	50
	Palmyra.....	37 30	78 00	do	do	50
	Buckingham.....	37 30	78 30	do	do	100
	Lexington.....	37 30	79 00	do	do	100
	Natural Bridge.....	37 30	79 30	do	do	100
	Farmville.....	37 00	78 00	do	do	50
	Roanoke.....	37 00	79 30	do	do	100
	Appomattox.....	37 00	78 30	do	do	50
	Lynchburg.....	37 00	79 00	do	do	100
	Virginia Beach.....	36 30	75 30	do	do	5
Virginia and West Virginia.	Norfolk.....	36 30	76 00	do	do	5
	Winchester.....	39 00	78 00	do	do	100
	Woodstock.....	38 30	78 30	do	do	100
	Franklin.....	38 30	79 00	do	do	100
	Beverly.....	38 30	79 30	do	do	100
	Staunton.....	38 00	79 00	do	do	100
	Monterey.....	38 00	79 30	do	do	100
	Lewisburg.....	37 30	80 00	do	do	100
	Christiansburg.....	37 00	80 00	do	do	100
	Dublin.....	37 00	80 30	do	do	100
	Pocahontas.....	37 00	81 00	do	do	100
	Tazewell.....	37 00	81 30	do	do	100
West Virginia.....	St. George.....	39 00	79 30	do	do	100
	Huntersville.....	38 00	80 00	do	do	100
	Nicholas.....	38 00	80 30	do	do	100
	Kanawha Falls.....	38 00	81 00	do	do	100
	Hinton.....	37 30	80 30	do	do	100
	Raleigh.....	37 30	81 00	do	do	100
	Oceana.....	37 30	81 30	do	do	100
	Charleston.....	38 00	81 30	do	do	100
	Buckhannon.....	38 30	80 00	do	do	100
	Sutton.....	38 30	80 30	do	do	100
West Virginia and Ohio.	Huntington.....	38 00	82 00	do	do	100
West Virginia, Virginia, and Kentucky.	Warfield.....	37 30	82 00	do	do	100
Kentucky.....	Prestonburg.....	37 30	82 30	do	do	100
	Salyersville.....	37 30	83 00	do	do	100
	Hazard.....	37 00	83 00	do	do	100
	Manchester.....	37 00	83 30	do	do	100
	Beattyville.....	37 30	83 30	do	do	100
	Richmond.....	37 30	84 00	do	do	100
	London.....	37 00	84 00	do	do	100
Kentucky and Virginia..	Whitesburg.....	37 00	82 30	do	do	100
	Grundy.....	37 00	82 00	do	do	100

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° ' "	° ' "			Feet.
Virginia and North Carolina.	Hillsville .....	36 30	80 30	½ degree.	1:125000	100
	Wytheville .....	36 30	81 00	do	do	100
Virginia, North Carolina, and Tennessee.	Abingdon .....	36 30	81 30	do	do	100
Virginia and Tennessee.	Bristol .....	36 30	82 00	do	do	100
Kentucky, Virginia, and Tennessee.	Estillville .....	36 30	82 30	do	do	100
	Jonesville .....	36 30	83 00	do	do	100
	Cumberland Gap .....	36 30	83 30	do	do	100
Kentucky and Tennessee	Williamsburg .....	36 30	84 00	do	do	100
	Wilkesboro .....	36 00	81 00	do	do	100
North Carolina .....	Morganton .....	35 30	81 30	do	do	100
	Cowee .....	35 00	83 00	do	do	100
	Statesville .....	35 30	80 30	do	do	50
North Carolina and Tennessee.	Roan Mountain .....	36 00	82 00	do	do	100
	Cranberry .....	36 00	81 30	do	do	100
	Greenville .....	36 00	82 30	do	do	100
	Mount Mitchell .....	35 30	82 00	do	do	100
	Asheville .....	35 30	82 30	do	do	100
	Mount Guyot .....	35 30	83 00	do	do	100
	Knoxville .....	35 30	83 30	do	do	100
	Nantahalaha .....	35 00	83 30	do	do	100
	Murphy .....	35 00	84 00	do	do	100
North Carolina and South Carolina.	Saluda .....	35 00	82 00	do	do	100
	Pisgah .....	35 00	82 30	do	do	100
Tennessee .....	Morristown .....	36 00	83 00	do	do	100
	Maynardville .....	36 00	83 30	do	do	100
	Loudon .....	35 30	84 00	do	do	100
	Kingston .....	35 30	84 30	do	do	100
	Cleveland .....	35 00	84 30	do	do	100
	Chattanooga .....	35 00	85 00	do	do	100
	Pikeville .....	35 30	85 00	do	do	100
	Sewanee .....	35 00	85 30	do	do	100
	McMinnville .....	35 30	85 30	do	do	100
	Briceville .....	36 00	84 00	do	do	100
South Carolina .....	Pickens .....	34 30	82 30	do	do	100
	Abbeville .....	34 00	82 00	do	do	50
South Carolina and Georgia.	Walhalla .....	34 30	83 00	do	do	50
	Elberton .....	34 00	82 30	do	do	100
	McCormick .....	33 30	82 00	do	do	50
Georgia .....	Dahlonega .....	34 30	83 30	do	do	100
	Ellijay .....	34 30	84 00	do	do	100
	Dalton .....	34 30	84 30	do	do	100
	Carnesville .....	34 00	83 00	do	do	100
	Gainesville .....	34 00	83 30	do	do	100
	Suwanee .....	34 00	84 00	do	do	100
	Cartersville .....	34 00	84 30	do	do	100
	Atlanta .....	33 30	84 00	do	do	100
	Marietta .....	33 30	84 30	do	do	50
	Ringgold .....	34 30	85 00	do	do	100
Georgia and Alabama .....	Rome .....	34 00	85 00	do	do	100
	Tallapoosa .....	33 30	85 00	do	do	100
Alabama .....	Stevenson .....	34 30	85 30	do	do	100
	Scottsboro .....	34 30	86 00	do	do	100
	Huntsville .....	34 30	86 30	do	do	100



Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° /	° /			<i>Feet.</i>
Alabama .....	Fort Payne .....	34 00	85 30	$\frac{1}{4}$ degree.	1:125000	100
	Gadsden .....	34 00	86 00	do	do	100
	Cullman .....	34 00	86 30	do	do	100
	Anniston .....	33 30	85 30	do	do	100
	Springville .....	33 30	86 00	do	do	100
	Birmingham .....	33 30	86 30	do	do	100
	Ashland .....	33 00	85 30	do	do	100
	Talladega .....	33 00	86 00	do	do	100
	Bessemer .....	33 00	86 30	do	do	100
	Clanton .....	32 30	86 30	do	do	50
Louisiana .....	Bonnett Carre .....	30 00	90 15	$\frac{1}{8}$ degree	1:62500	5
	Spanish Fort .....	30 00	90 00	do	do	None.
	New Orleans .....	29 45	90 00	do	do	5
	Lac des Allemands .....	29 45	90 30	do	do	5
	St. Bernard .....	29 45	89 45	do	do	5
	Hahnville .....	29 45	90 15	do	do	5
	Thibodeaux .....	29 45	90 45	do	do	5
	Pointe à la Hache .....	29 30	89 45	do	do	5
	Quarantine .....	29 15	89 30	do	do	5
	Barataria .....	29 30	90 00	do	do	5
	Fort Livingstone .....	29 15	89 45	do	do	None.
	Chef Menteur .....	30 00	89 45	do	do	None.
	Cut Off .....	29 30	90 15	do	do	5
	Cheniere Caminada .....	29 00	90 00	do	do	None.
	Houma .....	29 30	90 30	do	do	5
	Mount Airy .....	30 00	90 30	do	do	5
	Donaldsonville .....	30 00	90 45	do	do	5
	West Delta .....	29 00	89 15	do	do	None.
	Creole .....	29 15	90 00	do	do	None.
	Gibson .....	29 30	90 45	do	do	5
	East Delta .....	29 00	89 00	do	do	5
	Forts .....	29 15	89 15	do	do	5
	La Fortuna .....	29 30	89 15	do	do	5
	Shell Beach .....	29 45	89 30	do	do	5
	Cat Island .....	30 00	89 00	do	do	5
	Toulme .....	30 00	89 15	do	do	5
	Rigolets .....	30 00	89 30	do	do	5
Florida .....	Dunellon .....	29 00	82 15	do	do	10
	Arredondo .....	29 30	82 15	do	do	10
Wisconsin .....	Sun Prairie .....	43 00	89 00	do	do	20
	Waterloo .....	43 00	88 45	do	do	20
	Madison .....	43 00	89 15	do	do	20
	Koshkonong .....	42 45	88 45	do	do	20
	Stoughton .....	42 45	89 00	do	do	20
	Evansville .....	42 45	89 15	do	do	20
	Whitewater .....	42 45	88 30	do	do	20
	Eagle .....	42 45	88 15	do	do	20
	Watertown .....	43 00	88 30	do	do	20
	Port Washington .....	43 15	87 45	do	do	20
	Bayview .....	42 45	87 45	do	do	20
	Racine .....	42 30	87 45	do	do	20
	Oconomowoc .....	43 00	88 15	do	do	20
	Waukesha .....	43 00	88 00	do	do	20

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° /	° /			<i>Feet.</i>
Wisconsin.....	Milwaukee.....	43 00	87 45	$\frac{1}{16}$ degree	1:62500	20
	Muskego.....	42 45	88 00	do	do	20
Illinois.....	Desplaines.....	41 45	87 45	do	do	10
	Riverside.....	41 30	87 45	do	do	10
	Joliet.....	41 30	88 00	do	do	10
	Wilmington.....	41 15	88 00	do	do	10
	Morris.....	41 15	88 15	do	do	10
	Marseilles.....	41 15	88 30	do	do	10
	Ottawa.....	41 15	88 45	do	do	10
	Chicago.....	41 45	87 30	do	do	5
	Lacon.....	41 00	89 15	do	do	10
	Lasalle.....	41 15	89 00	do	do	10
	Heunepin.....	41 15	89 15	do	do	10
Illinois and Indiana.....	Calumet.....	41 30	87 30	do	do	10
Iowa.....	Maquoketa.....	42 00	90 30	do	do	20
	Baldwin.....	42 00	90 45	do	do	20
	Monticello.....	42 00	91 00	do	do	20
	Anamosa.....	42 00	91 15	do	do	20
	Marion.....	42 00	91 30	do	do	20
	Shellsburg.....	42 00	91 45	do	do	20
	DeWitt.....	41 45	90 30	do	do	20
	Wheatland.....	41 45	90 45	do	do	20
	Tipton.....	41 45	91 00	do	do	20
	Mechanicsville.....	41 45	91 15	do	do	20
	Cedar Rapids.....	41 45	91 30	do	do	20
	Amana.....	41 45	91 45	do	do	20
	West Liberty.....	41 30	91 15	do	do	20
	Iowa City.....	41 30	91 30	do	do	20
	Oxford.....	41 30	91 45	do	do	20
	Davenport.....	41 30	90 30	do	do	20
	Durant.....	40 30	90 45	do	do	20
	Wilton Junction.....	41 30	91 00	do	do	20
Iowa and Illinois.....	Clinton.....	41 45	90 00	do	do	20
	Goose Lake.....	41 45	90 15	do	do	20
	Leclaire.....	41 30	90 15	do	do	20
	Savanna.....	42 00	90 00	do	do	20
Missouri and Illinois.....	Louisiana.....	39 00	91 00	$\frac{1}{4}$ degree.	1:125000	50
	St. Louis, East.....	38 30	90 00	$\frac{1}{16}$ degree	1:62500	20
Missouri.....	St. Louis, West.....	38 30	90 15	do	do	20
	Mexico.....	39 00	91 30	$\frac{1}{4}$ degree.	1:125000	50
	Moberly.....	39 00	92 00	do	do	50
	Glasgow.....	39 00	92 30	do	do	50
	Marshall.....	39 00	93 00	do	do	50
	Lexington.....	39 00	93 30	do	do	50
	Independence.....	39 00	94 00	do	do	50
	Hermann.....	38 30	91 00	do	do	50
	Fulton.....	38 30	91 30	do	do	50
	Jefferson City.....	38 30	92 00	do	do	50
	Boonville.....	38 30	92 30	do	do	50
	Sedalia.....	38 30	93 00	do	do	50
	Warrensburg.....	38 30	93 30	do	do	50
	Harrisonville.....	38 30	94 00	do	do	50
	Tuscumbia.....	38 00	92 00	do	do	50
	Versailles.....	38 00	92 30	do	do	50

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° ' "	° ' "			<i>Feet.</i>
Missouri.....	Warsaw .....	38 00	93 00	$\frac{1}{4}$ degree	1:125000	50
	Clinton .....	38 00	93 30	do	do	50
	Butler .....	38 00	94 00	do	do	50
	Bolivar .....	37 30	93 00	do	do	50
	Stockton .....	37 30	93 30	do	do	50
	Nevada .....	37 30	94 00	do	do	50
	Springfield .....	37 00	93 00	do	do	50
	Greenfield .....	37 00	93 30	do	do	50
Missouri and Kansas ....	Carthage .....	37 00	94 00	do	do	50
	Atchison .....	39 30	95 00	do	do	50
	Kansas City .....	39 00	94 30	do	do	50
	Olathe .....	38 30	94 30	do	do	50
	Mound City .....	38 00	94 30	do	do	50
Kansas .....	Fort Scott .....	37 30	94 30	do	do	50
	Joplin .....	37 00	94 30	do	do	50
	Hiawatha .....	39 30	95 30	do	do	50
	Seneca .....	39 30	96 00	do	do	50
	Marysville .....	39 30	96 30	do	do	50
	Oskaloosa .....	39 00	95 00	do	do	50
	Topeka .....	39 00	95 30	do	do	50
	Wamego .....	39 00	96 00	do	do	50
	Junction City .....	39 00	96 30	do	do	50
	Lawrence .....	38 30	95 00	do	do	50
	Burlingame .....	38 30	95 30	do	do	50
	Esbridge .....	38 30	96 00	do	do	50
	Parkerville .....	38 30	96 30	do	do	50
	Abilene .....	38 30	97 00	do	do	50
	Garnett .....	38 00	95 00	do	do	50
	Burlington .....	38 00	95 30	do	do	50
	Emporia .....	38 00	96 00	do	do	50
	Cottonwood Falls .....	38 00	96 30	do	do	50
	Newton .....	38 00	97 00	do	do	50
	Hutchinson .....	38 00	97 30	do	do	20
	Lyons .....	38 00	98 00	do	do	20
	Great Bend .....	38 00	98 30	do	do	20
	Larned .....	38 00	99 00	do	do	20
	Ness City .....	38 00	99 30	do	do	20
	Iola .....	37 30	95 00	do	do	50
	Fredonia .....	37 30	95 30	do	do	50
	Eureka .....	37 30	96 00	do	do	50
	Eldorado .....	37 30	96 30	do	do	50
	Wichita .....	37 30	97 00	do	do	50
	Cheney .....	37 30	97 30	do	do	20
	Kingman .....	37 30	98 00	do	do	20
	Pratt .....	37 30	98 30	do	do	20
	Kinsley .....	37 30	99 00	do	do	20
	Spearville .....	37 30	99 30	do	do	20
	Parsons .....	37 00	95 00	do	do	50
	Independence .....	37 00	95 30	do	do	50
	Sedan .....	37 00	96 00	do	do	50
	Burden .....	37 00	96 30	do	do	50
	Wellington .....	37 00	97 00	do	do	50
	Caldwell .....	37 00	97 30	do	do	20
	Anthony .....	37 00	98 00	do	do	20

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		o /	o /			<i>Feet.</i>
Kansas .....	Dodge .....	37 30	100 00	$\frac{1}{4}$ degree	1:125000	20
	Meade .....	37 00	100 00	do	do	20
	Clay Center .....	39 00	97 00	do	do	20
	Concordia .....	39 30	97 30	$\frac{1}{6}$ degree	do	20
	Minneapolis .....	39 00	97 30	do	do	20
	Medicine Lodge .....	37 00	98 30	do	do	20
	Coldwater .....	37 00	99 00	do	do	20
	Salina .....	38 30	97 30	do	do	20
Arkansas .....	Washington .....	39 00	97 00	do	do	20
	Mountain View .....	36 30	92 00	do	do	50
	Marshall .....	35 30	92 30	do	do	50
	Morrilton .....	35 00	92 30	do	do	50
	Dardanelle .....	35 00	93 00	do	do	50
	Magazine Mountain .....	35 00	93 30	do	do	50
	Fort Smith .....	35 00	94 00	do	do	50
	Benton .....	34 30	92 30	do	do	50
	Hot Springs .....	34 30	93 00	do	do	50
	Mount Ida .....	34 30	93 30	do	do	50
	Poteau Mountain .....	34 30	94 00	do	do	50
	Aplin .....	35 00	93 00	1 degree	1:62500	20
	Greenwood .....	35 00	94 15	do	do	20
	Atkins .....	35 00	92 45	do	do	20
	Washburn .....	35 00	94 00	do	do	20
	Petit Jean .....	35 00	92 45	do	do	20
	Danville .....	35 00	93 15	do	do	20
	Russellville .....	35 15	93 00	do	do	20
	Clarksville .....	35 15	93 15	do	do	20
	Coal Hill .....	35 15	93 30	do	do	20
	Van Buren .....	35 15	94 15	do	do	20
	Arbuckle .....	35 15	94 00	do	do	20
	Ozark .....	35 15	93 45	do	do	20
	Oak Mountain .....	35 15	92 45	do	do	20
	Mountain Home .....	36 00	92 00	$\frac{1}{4}$ degree	1:125000	50
	Batesville .....	35 30	91 30	do	do	50
	Little Rock .....	34 30	92 00	do	do	50
	Yellville .....	36 00	92 30	do	do	50
Texas .....	Dallas .....	32 30	96 30	do	do	20
	Fort Worth .....	32 30	97 00	do	do	20
	Weatherford .....	32 30	97 30	do	do	50
	Palo Pinto .....	32 30	98 00	do	do	50
	Breckenridge .....	32 30	98 30	do	do	50
	Albany .....	32 30	99 00	do	do	50
	Anson .....	32 30	99 30	do	do	50
	Cleburne .....	32 00	97 00	do	do	50
	Granbury .....	32 00	97 30	do	do	50
	Stephenville .....	32 00	98 00	do	do	50
	Eastland .....	32 00	98 30	do	do	50
	Meridian .....	31 30	97 30	do	do	50
	Hamilton .....	31 30	98 00	do	do	50
	Brownwood .....	31 30	98 30	do	do	50
	Coleman .....	31 30	99 00	do	do	50
	Gatesville .....	31 00	97 30	do	do	50
	Lampasas .....	31 00	98 00	do	do	50
	San Saba .....	31 00	98 30	do	do	50



Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° /	° /			<i>Feet.</i>
Texas.....	Brady .....	31 00	99 00	¼ degree.	1:125000	50
	Taylor.....	30 30	97 00	do	do	50
	Georgetown .....	30 30	97 30	do	do	50
	Burnet .....	30 30	98 00	do	do	50
	Llano.....	30 30	98 30	do	do	50
	Mason.....	30 30	99 00	do	do	50
	Bastrop.....	30 00	97 00	do	do	50
	Austin.....	30 00	97 30	do	do	50
	Blanco.....	30 00	98 00	do	do	50
	Fredericksburg.....	30 00	98 30	do	do	50
	Kerrville.....	30 00	99 00	do	do	50
	Albany.....	32 30	99 00	do	do	50
	Hayrick.....	31 30	100 00	do	do	50
	San Angelo.....	31 00	100 00	do	do	50
	Waco.....	31 30	97 00	do	do	50
	Temple.....	31 00	97 00	do	do	50
	Eden.....	31 00	99 30	do	do	50
	Abilene.....	32 00	99 30	do	do	50
	Ballinger.....	31 30	99 30	do	do	50
	Sierra Blanca.....	31 00	105 00	do	do	50
South Dakota.....	Roby.....	52 30	100 00	do	do	25
	Nueces.....	29 30	100 00	do	do	25
Montana.....	Rapid City.....	44 00	103 00	do	do	100
Montana.....	Fort Benton.....	47 00	110 00	1 degree.	1:250000	200
	Great Falls.....	47 00	111 00	do	do	200
	Big Snowy Mountain.....	46 00	109 00	do	do	200
	Little Belt Mountain.....	46 00	110 00	do	do	200
	Fort Logan.....	46 00	111 00	do	do	200
	Helena.....	46 00	112 00	do	do	200
	Livingston.....	45 00	110 00	do	do	200
	Three Forks.....	45 00	111 00	do	do	200
	Dillon.....	45 00	112 00	do	do	200
	Big Timber.....	45 30	109 30	¼ degree.	1:125000	50
	Stillwater.....	45 30	109 00	do	do	50
	Huntley.....	45 30	108 00	do	1:62500	50
	Yellowstone National Park.....	44 30	110 00	do	1:125000	100
Yellowstone National Park.	Gallatin.....	44 30	110 30	do	do	100
	Lake.....	44 00	110 00	do	do	100
	Shoshone.....	44 00	110 30	do	do	100
	Fort Steele.....	41 30	106 30	do	do	25 and 50
Wyoming.....	Camas Prairie.....	43 00	115 00	do	do	100
Idaho.....	Mountain Home.....	43 00	115 30	do	do	100
	Bisnka.....	43 00	116 00	do	do	25, 50, 100
	Boise.....	43 30	116 00	do	do	25, 50, 100
	Nampa.....	43 30	116 30	do	do	50 and 100
	Bear Valley.....	44 00	115 00	do	do	100
	Squaw Valley.....	44 00	116 00	do	do	100
	Oregon.....	42 00	121 00	1 degree.	1:250000	200
	Ashland.....	42 00	122 00	do	do	200
Colorado.....	East Denver.....	39 30	104 30	¼ degree.	1:125000	50
	Crested Butte.....	38 45	106 45	⅓ degree	1:62500	100
	Anthracite.....	38 45	107 00	do	do	100
	Arroya.....	38 30	103 00	¼ degree.	1:125000	100
	Sanborn.....	38 30	103 30	do	do	100

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° /	° /			Feet.
Colorado.....	Big Springs .....	38 30	104 00	¼ degree.	1:125000	100
	Las Animas .....	38 00	103 00	do	do	100
	Catlin .....	38 00	103 30	do	do	100
	Nepesta .....	38 00	104 00	do	do	100
	Pueblo.....	38 00	104 30	do	do	100
	Higbee .....	37 30	103 00	do	do	100
	Timpas .....	37 30	103 30	do	do	100
	Apishapa .....	37 30	104 00	do	do	100
	Kit Carson .....	38 30	102 30	do	do	25
	Vilas .....	37 00	102 00	do	do	25
	Lamar .....	38 00	102 30	do	do	25
	Cheyenne Wells .....	38 30	102 00	do	do	25
	Limon .....	39 00	103 30	do	do	25
	Leadville .....	39 00	106 00	do	do	25, 50, 100
	Huerfano Park .....	37 30	105 00	do	do	25, 50, 100
	Walsenburg .....	37 30	104 30	do	do	25, 50, 100
	Colorado Springs .....	38 30	104 30	do	do	25, 50, 100
	El Moro .....	37 00	104 00	do	do	25, 50, 100
	Canyon City .....	38 00	105 00	do	do	25, 50, 100
	Trinidad .....	37 00	104 30	do	do	25, 50, 100
	Mesa de Maya .....	37 00	103 30	do	do	25, 50, 100
	Mount Carriso .....	37 00	103 00	do	do	25, 50, 100
	Two Butte .....	37 30	102 30	do	do	25 and 50
	Springfield .....	37 00	102 30	do	do	25 and 50
	Platte Canyon .....	39 00	105 00	do	do	25, 50, 100
Colorado and Kansas.....	Grenada .....	38 00	102 00	do	do	25
Colorado and Utah.....	Ashley .....	40 00	109 00	1 degree.	1:250000	250
	East Tavaputs .....	39 00	109 00	do	do	250
	La Sal .....	38 00	109 00	do	do	250
	Abajo .....	37 00	109 00	do	do	250
Utah.....	Uinta .....	40 00	110 00	do	do	250
	Salt Lake .....	40 00	111 00	do	do	250
	Tooele Valley .....	40 00	112 00	do	do	250
	Price River .....	39 00	110 00	do	do	250
	Manti .....	39 00	111 00	do	do	250
	Sevier Desert .....	39 00	112 00	do	do	250
	San Rafael .....	38 00	110 00	do	do	250
	Fish Lake .....	38 00	111 00	do	do	250
	Beaver .....	38 00	112 00	do	do	250
	Henry Mountain .....	37 00	110 00	do	do	250
	Escalante .....	37 00	111 00	do	do	250
	Kanab .....	37 00	112 00	do	do	250
	St. George .....	37 00	113 00	do	do	250
	Pioche .....	37 00	114 00	do	do	250
Utah and Nevada.....	Paradise .....	41 00	117 00	do	do	200
Nevada.....	Disaster .....	41 00	118 00	do	do	200
	Long Valley .....	41 00	119 00	do	do	200
	Granite Range .....	40 00	119 00	do	do	200
	Carson .....	39 00	119 30	¼ degree.	1:125000	100
	Reno .....	39 30	119 30	do	do	100
	Wabuska .....	39 00	119 00	do	do	100
	Wadsworth .....	39 30	119 00	do	do	100
Nevada and California...	Truckee .....	39 00	120 00	do	do	100
	Wellington .....	38 30	119 00	do	do	100
	Markleeville .....	38 30	119 30	do	do	100

Locality.	Name of sheet.	Designation of sheet.		Area covered.	Scale.	Contour interval.
		Lat.	Long.			
		° /	° /			<i>Feet.</i>
California .....	Alturas.....	41 00	120 00	1 degree.	1:250000	200
	Modoc Lava Bed.....	41 00	121 00	do do	do	200
	Shasta.....	41 00	122 00	do do	do	200
	Honey Lake.....	40 00	120 00	do do	do	200
	Lassen Peak.....	40 00	121 00	do do	do	200
	Red Bluff.....	40 00	122 00	do do	do	200
	Downieville.....	39 30	120 30	$\frac{1}{4}$ degree.	1:125000	50
	Bidwell Bar.....	39 30	121 00	do do	do	50
	Chico.....	39 30	121 30	do do	do	100
	Colfax.....	39 00	120 30	do do	do	100
	Nevada City.....	39 00	121 00	do do	do	100
	Marysville.....	39 00	121 30	do do	do	100
	Placerville.....	38 30	120 30	do do	do	100
	Sacramento.....	38 30	121 00	do do	do	100
	Jackson.....	38 00	120 30	do do	do	100
	Pyramid Peak.....	38 30	120 00	do do	do	100
	Sierraville.....	39 30	120 00	do do	do	100
	Senora.....	37 30	120 00	do do	do	100
	Escondido.....	33 00	117 00	$1\frac{1}{2}$ degree	1:62500	25
	Oceanside.....	33 00	117 15	do do	do	25
	El Cajon.....	32 45	116 45	do do	do	25
New Mexico.....	Largo.....	36 00	107 00	1 degree.	1:250000	200
	Chaco.....	36 00	108 00	do do	do	200
	Santa Clara.....	35 30	106 00	$\frac{1}{4}$ degree.	1:125000	100
	Jemez.....	35 30	106 30	do do	do	100
	Albuquerque.....	35 00	106 30	do do	do	50
	Mount Taylor.....	35 00	107 00	1 degree.	1:250000	200
	Wingate.....	35 00	108 00	do do	do	200
	Las Vegas.....	35 30	105 00	$\frac{1}{4}$ degree.	1:125000	50
	Watrous.....	35 30	104 30	do do	do	50
	Bernal.....	35 00	105 00	do do	do	50
	Corazon.....	35 00	104 30	do do	do	50
	Las Cruces.....	32 00	106 30	do do	do	25 and 50
	Lamy.....	35 00	105 30	do do	do	50 and 100
	San Pedro.....	35 00	106 00	do do	do	50 and 100
	Santa Fe.....	35 30	105 30	do do	do	100
New Mexico and Arizona.	Canyon de Chelly.....	36 00	109 00	1 degree.	1:250000	200
	Fort Defiance.....	35 00	109 00	do do	do	200
	St. Johns.....	34 00	109 00	do do	do	200
Arizona .....	Marsh Pass.....	36 00	110 00	do do	do	200
	Echo Cliffs.....	36 00	111 00	do do	do	250
	Kaibab.....	36 00	112 00	do do	do	250
	Mount Trumbull.....	36 00	113 00	do do	do	250
	Tusayan.....	35 00	110 00	do do	do	200
	San Francisco Mountain.	35 00	111 00	do do	do	250
	Chino.....	35 00	112 00	do do	do	250
	Diamond Creek.....	35 00	113 00	do do	do	250
	Holbrook.....	34 00	110 00	do do	do	200
	Verde.....	34 00	111 00	do do	do	200
Arizona and Nevada.....	Prescott.....	34 00	112 00	do do	do	200
	St. Thomas.....	36 00	114 00	do do	do	250
Arizona, Nevada, and California.	Camp Mohave.....	35 00	114 00	do do	do	250

## SPECIAL TOPOGRAPHIC SHEETS.

Aspen, Colorado. Scale, 1:9,600; contour interval, 25 feet.

Banner Hill, California. Scale, 1:14,400; contour interval, 20 feet.

Grass Valley, California. Scale, 1:14,400; contour interval, 20 feet.

Genesee, California. Scale, 1:31,680; contour interval, 50 feet.

Taylorsville, California. Scale, 1:31,680; contour interval, 50 feet.

Indian Valley, California. Scale, 1:62,500; contour interval, 50 feet.

Other special topographic sheets accompany some of the volumes of text; see especially contents of atlases to monographs II, III, XII, XIII, XX, as detailed on pages 96, 98, 113, 115, and 125 of this bulletin.

## MISCELLANEOUS TOPOGRAPHIC MAPS.

Contour map of the United States; scale 1:2,500,000. 9 sheets.

Contour map of the United States; scale 1:7,000,000. 1 sheet.

Hypsometric map of the United States; scale 1:7,000,000. 1 sheet.

Index map of the United States; scale 1:2,500,000. 9 sheets.

Base map of the United States; scale 1:7,000,000. 1 sheet.

Base map of the United States; scale 1:14,000,000. 1 sheet.

Contour map of the state of Massachusetts; scale 1:250,000. 4 sheets.

Contour map of the state of Connecticut; scale 1:125,000. 4 sheets.

Contour map of the states of Massachusetts and Rhode Island; scale 1:250,000. 4 sheets.

Contour map of the drainage basin of the Arkansas river in Colorado; scale 1:380,160. 2 sheets.

These miscellaneous maps are compilations.



## MISCELLANEOUS PUBLICATIONS.

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### CIRCULARS OF INSTRUCTIONS.

(Circular no. 1.) | Department of the interior, | United States geological survey, | office of the director, | Washington, July 16, 1879.

A small sheet, measuring about 5 by 8 inches, with the above heading, and signed "Clarence King, director." It calls the attention of officers and employees of the survey to the provision of law prohibiting personal or private interest by the director and members of the survey in the lands or mineral wealth of the region under survey and their execution of surveys or examinations for private parties or corporations.

Circular no. 2. | Department of the interior, | United States geological survey, | office of the director, | Washington, July 16, 1879.

A small sheet, measuring about 5 by 8 inches, with the above heading, and signed "Clarence King, director." It relates to official correspondence.

Circular no. 3. | Department of the interior, | United States geological survey, | office of the director, | Washington, D. C., April 1, 1880.

A small circular, pp. [1]-3, verso blank, measuring about 5 by 8 inches, and signed "Clarence King, director." It relates to reports to be rendered by disbursing officers.

(Circular no. 4.) | Department of the interior, | United States geological survey, | office of the director, | Washington, May 26, 1880.

A small sheet, measuring about 5 by 8 inches, with the above heading, and signed "Clarence King, director." It relates to the entering by members of the survey of private or corporate mining property and to giving expert testimony in lawsuits.

Circular no. 5. | Department of the interior, | United States geological survey, | office of the director, | Washington, D. C., September 10, 1881. | Instructions relating to the form of the reports of the | U. S. geological survey.

A small circular, 2 leaves (verso of each blank), measuring about 5 by 8 inches, and signed "J. W. Powell, director." 1,500 copies issued.

Circular no. 6. | Department of the interior, | United States geological survey, | Washington, D. C., June 6, 1882.

A small sheet, measuring about 5 by 8 inches, with the above heading, and signed "J. W. Powell, director." It relates to the survey ration. 250 copies issued.

These six circulars of instructions were rescinded and superseded by the following:

## REGULATIONS.

United States geological survey | J. W. Powell director | Regula-  
tions | of the | U. S. geological survey | [Survey design] |  
Washington | government printing office | 1882

Title as above, verso blank; contents, pp. v-vi; promulgating order by the director, dated Sept. 1, 1882, and approved by the acting secretary of the interior, p. [vii], verso blank; text, pp. 1-51. 8°. Bound in cloth and lettered on front cover: "Regulations | of the | U. S. geological survey | 1882". 200 copies were issued in this form. Besides these there were 50 copies issued with paper covers, the full title being repeated on the cover.

	Page.
Chapter I. Organic law of the survey, with instructions relating to its provisions.....	1-2
Chapter II. Instructions relating to money and property.....	3-36
Chapter III. Instructions relative to bonded railroads.....	37-43
Chapter IV. Instructions relating to collections.....	44-46
Chapter V. Instructions relating to publications.....	47-50
Chapter VI. Miscellaneous instructions.....	51

A revision of these Regulations is in an advanced state of preparation.

## CIRCULAR CONCERNING PUBLICATIONS.

Department of the interior, | United States geological survey, |  
Washington, D. C., . . . . . 188. | Circular concerning publica-  
tions.

[Washington: government printing office. 1882.]

One leaf (two unnumbered pages), with heading as above. 4°. 1,000 copies.

Brief titles, collations, contents, and prices are given, the whole preceded by information respecting the distribution of the reports.

This circular has been revised and reissued from time to time, and has, of course, grown with the increase of survey publications. The last one at this writing is as follows:

(9-320.) | Department of the interior | United States geological sur-  
vey | J. W. Powell, director | List | of the | publications | of the | U.  
S. geological survey | J. W. Powell | director | [Survey design] |

Washington | government printing office | 1893

Paper cover bearing title as above; inner title same, verso blank; prefatory note, p. 3, verso blank; the list of survey publications, pp. 5-44; finding list, showing where in the congressional documents the publications of the U. S. geological survey are to be found, pp. 45-46. 8°. 2,500 copies.

## GUYOT'S TABLES.

Guyot's tables | for | computing differences of elevation | from |  
barometric observations. | (Extract from Smithsonian miscellaneous  
collections, no. 31.)

[Washington: government printing office. 1884.]

Paper cover bearing half-title as above; inner half-title same, verso blank; text, pp. 3-8; tables, pp. 9-18. 8°. 100 copies issued by the department of the interior on survey requisition.

## HISTORY OF AMERICAN STATE SURVEYS.

Department of the interior, | United States geological survey. | A proposed | history of American state surveys. |

*Colophon:* Washington, D. C., April 10, 1885.

No title; heading as given above; pp. [1]-4. 8°. 100 copies printed for distribution among gentlemen invited to contribute to the proposed history, accompanied by letters from the director.

After setting forth the purpose, scope, and manner of compilation of the proposed history, the information desired from contributors is indicated by a series of questions, grouped under the five following heads:

- I.—Questions relating to organization.
- II.—Questions relating to administration.
- III.—Questions relating to cost.
- IV.—Questions relating to publications.
- V.—Benefits resulting from the survey.

## RULES AND SUGGESTIONS FOR PREPARATION OF MANUSCRIPT AND ILLUSTRATIONS.

Rules | for the | preparation of manuscript and illustrations | designed for publication by the United | States geological survey. | By | Thomas Hampson. | January, 1888.

[Washington: government printing office. 1888.]

Paper cover bearing half-title as above; inner half-title same, verso blank; letter of transmittal to the director and approval of the rules by the director, pp. 3-4; the rules, pp. 5-19, verso blank; blank pages for manuscript additions or changes, pp. 21-24 (headed "Rules" at the top of p. 21). 8°. 500 copies published.

The following is a revision of these rules:

Suggestions | for the | preparation of manuscript and illustrations for | publication by the U. S. geological survey. | By W. A. Croffut. | January, 1892.

[Washington: government printing office, 1892.]

Half-title on paper cover as above; inner half-title the same, verso blank; letter of transmittal and approval of the director, p. 3, verso blank; text, pp. 5-15. 8°. 500 copies published.

## JOHNSON'S REPORT ON THE IRON REGIONS OF LOUISIANA AND TEXAS.

50th congress, | 1st session. | House of representatives. | Ex. doc. | no. 195. | Report | The iron regions | of | northern Louisiana | and | eastern Texas. |

Washington: | government printing office. | 1888.

Title as above, verso blank; contents, p. 3, verso blank; illustrations, p. 5, verso blank; letter of transmittal by the secretary of the interior to the speaker of the house of representatives, p. 7, verso blank; letter of transmittal by the director of the survey to the secretary of the interior, p. 9; letter of transmittal by the author, Lawrence C. Johnson, assistant geologist, to the director, pp. 9-10; text, pp. 11-54. 8°. Plate I (being a map of the region reported on); figs. 1-13. 1,734 copies, the "usual number."

A preliminary report, made in response to a resolution of inquiry of the house of representatives.

## DIGEST OF DECISIONS CONCERNING WATER IN THE ARID REGION.

A digest | of | the decisions | of the | supreme courts of the states and territories of the | arid region and of the United States circuit | and supreme courts in cases involving | questions relative to the use and | control of water in that region. | Compiled by | D. W. Campbell, esq., | of the United States geological survey; | revised and edited, under the direction of the secretary of the interior, by | W. C. Pollock, esq., | of the assistant attorney-general's office for the interior department. |

Washington: | government printing office. | 1889.

Title as above, verso blank; text, arranged alphabetically by subject matter of decision (e. g., ditch, flumes, riparian), pp. 3-59. 8°. 1,000 copies published; bound in sheep.



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# INDEX

TO THE

PUBLICATIONS OF THE U. S. GEOLOGICAL SURVEY.

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# INDEX TO THE PUBLICATIONS OF THE U. S. GEOLOGICAL SURVEY.

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Abbreviations: Ann = Annual Report; Mon = Monograph; Bull = Bulletin; MR = Mineral Resources;  
I = part I; II = part II; p = page; pp = pages.

- Aa type of lava, character of ..... Ann 4, p 95
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- Acadian province, the upper Paleozoic formations in the, correlations and  
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- Acadian. See, also, Canada.
- Accretions formed in the blast furnace ..... Mon XII, pp 725-731
- Actinolite, secondary character of ..... Ann 10, I, p 407
- Actinozoa from the Devonian of the Eureka district, Nevada... Mon VIII, pp 100-106
- Actinozoa of the Olenellus zone ..... Ann 10, I, pp 599-602
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